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Official Monthly Publication of the American Public Health Association, Inc.

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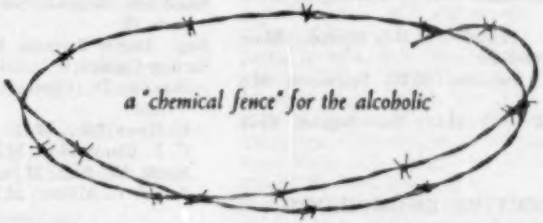
*Barrera, S. E., Osinski, W. A., and Davidoff, E.: Am. J. Psychiatry 107:8 (July) 1950.



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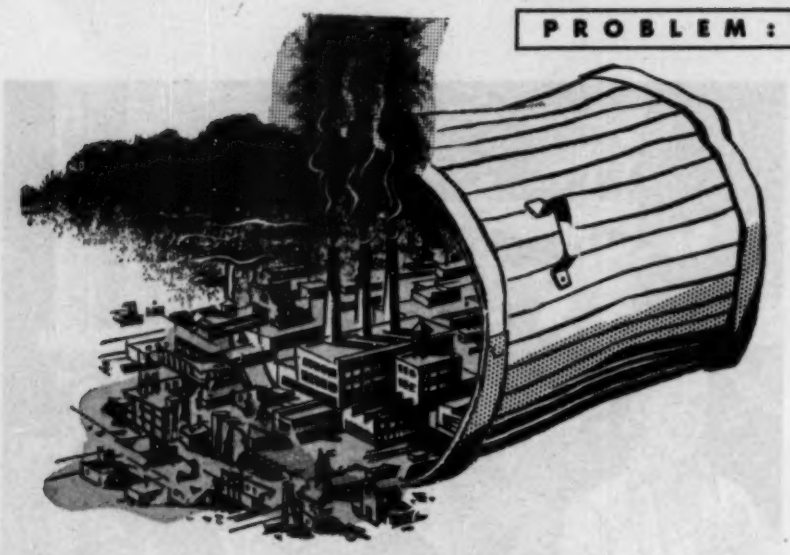

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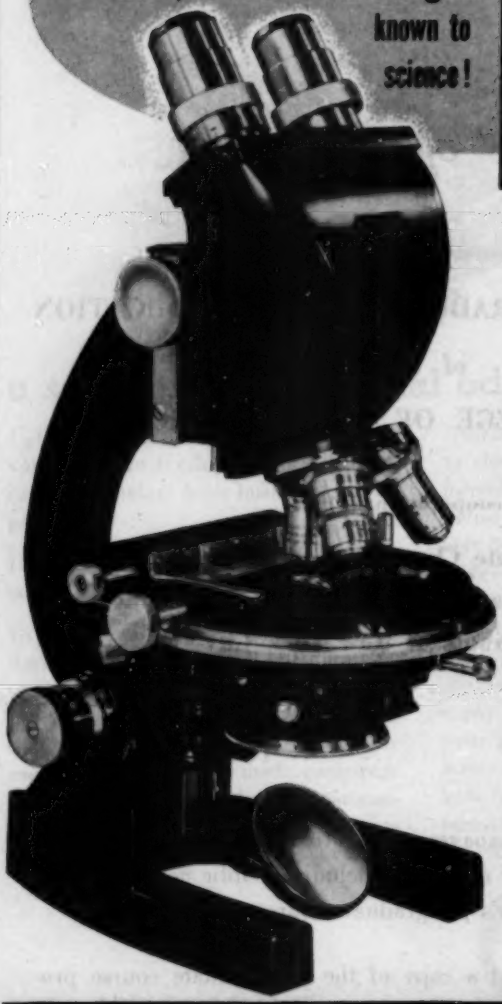

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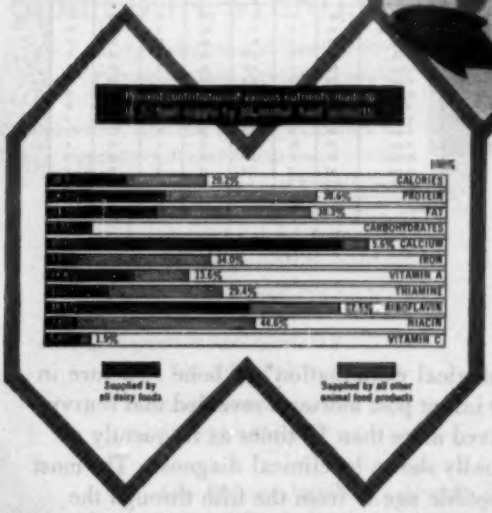

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Animal foods contain cholesterol, a lipid which is a normal constituent of all body cells, and which is synthesized by the body from substances derived from protein, fats, and carbohydrates. Disturbed lipid metabolism may result in deposition of cholesterol with fatty acids and protein in the inner walls of the blood vessels. This condition, atherosclerosis, is a forerunner of a number of cardiovascular diseases.[3]

Atherosclerosis is frequently associated with obesity, diabetes, and other metabolic disorders.[3-4] The cause of atherosclerosis has not been determined. Restriction of dietary cholesterol by elimination of animal foods has not been shown to be beneficial in its prevention or cure.[4]

The omission of the valuable nutrients found in these foods constitutes a nutritional risk not justified on the basis of currently available evidence.[5]

[1]Data supplied by Bureau of Human Nutrition and Home Economics, Agricultural Research Administration, U.S.D.A. (April) 1952.
[2]Okey, R., and Turner, E. Dietary protein as a lipotropic agent for cholesterol. Fed. Proc. *10*:390 (March) 1951.
[3]Gofman, J. W., and Jones, H. B. Obesity, fat metabolism and cardiovascular disease. Circulation *5*:514 (April) 1952.
[4]Keys, A. Human atherosclerosis and the diet. Circulation *5*:115 (January) 1952.
[5]Hegsted, D. M. Further comments on cholesterol. Presented before American Medical Association, Los Angeles, December 1951.

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Age	No. autopsies examined	No. with scurvy	% with scurvy	No. having syphilis	No. with scurvy	No. having rickets	No. with scurvy
0-15 da.	360	0	0	174	0	186	0
16-30 da.	90	1	—	41	1	49	0
1 mo.	89	0	0	48	0	71	0
2 mo.	90	2	2.2	34	2	56	0
3 mo.	68	3	4.3	31	3	38	0
4 mo.	79	2	2.5	26	1	53	1
5 mo.	73	12	16.5	25	3	46	9
6 mo.	53	13	24.5	19	5	34	8
7 mo.	54	10	18.5	22	7	32	3
8 mo.	40	5	12.5	18	2	22	3
9 mo.	35	10	28.3	13	4	26	4
10 mo.	41	5	12.2	16	0	23	5
11 mo.	40	3	7.5	12	0	28	3
12-23 mo.	177	3	—	68	1	109	2
Total	1300	69		546	29	757	46

PREVALENCE OF SCURVY

SCURVY

is more common than many think

Histological examination* of bone structure in 1300 infant post mortems revealed that scurvy occurred more than 10 times as frequently as is usually shown by clinical diagnosis. The most susceptible age is from the fifth through the eleventh month, with approximately 17% of infants exhibiting the histological signs. Over half of the children with scurvy had never received supplemental vitamin C. How easy to prevent, when Florida citrus is so rich in vitamin C content — so convenient, so economical, and so pleasant to take!

* *Bull. Johns Hopkins Hosp. 87:569, 1950.*

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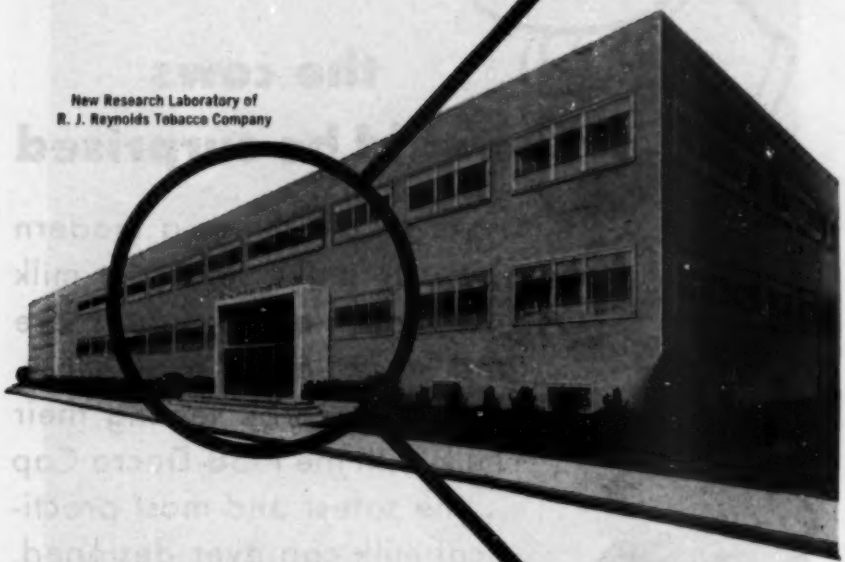

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The makers of Camels never cease their efforts to maintain and to improve the standards of quality that distinguish America's most popular cigarette.

The plant shown above, which was opened this year, is a $2,000,000 addition to Camel's research facilities.

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the cows would be surprised

to see all the things a modern dairy does to make sure their milk is kept safe and pure. More and more dairies are following through by sealing their milk with the P-38 Dacro Cap ...the safest and most practical milk cap ever designed.

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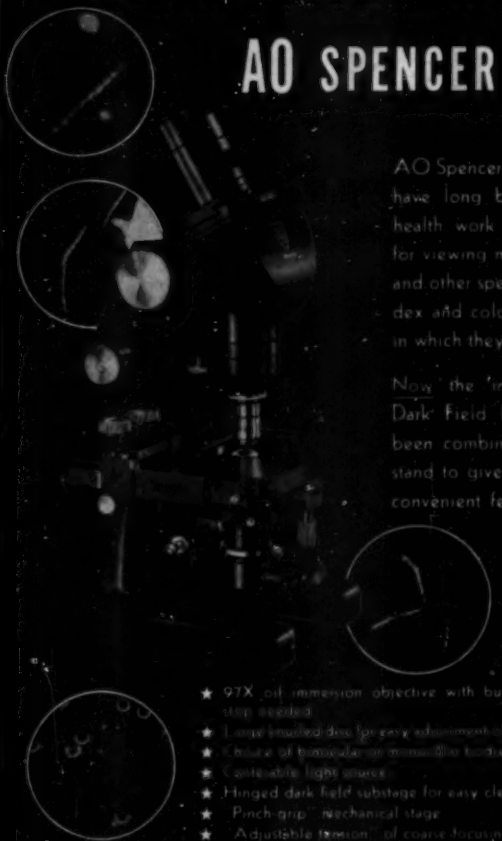

AO Spencer Dark Field Microscopes have long been popular in public health work and other applications, for viewing micro organisms, colloids and other specimens of a refractive index and color similar to the medium in which they are suspended.

Now the improved AO Spencer Dark Field Illumination system has been combined with the latest type stand to give you a host of new and convenient features. Ask your distributor about the many advantages of these up-to-date instruments.

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Visit us at our Booths 33 & 34 of the American Public Health Association Convention.

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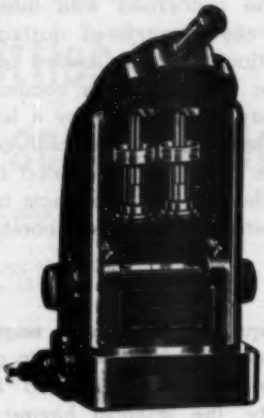

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New Sealed Accessories

FOR CENTRIFUGING INFECTIOUS MATERIALS

Purpose

Laboratory administrators interested in the health of their laboratory personnel have recently become concerned with infectious aerosols sometimes encountered during centrifuging. Infectious materials sealed in centrifuge tubes or bottles quickly become airborne when they are released by a leak or fracture of the container due to high centrifugal forces. The natural draft created by the fan action of the rotating head acts to distribute the material through the laboratory.

Approach

International Equipment Company engineers have adapted standard accessories to permit sealing of the centrifuge cup. To insure maximum safety, the scientist having completed centrifuging removes the sealed container to a hood for opening. In those instances where a leak or fracture has allowed the material to contaminate the container, immediate decontamination steps may be taken.

Solution

A series of accessories based upon the Hi-speed 250 ml. slotted cup has been designed. The standard cup is threaded to take a dome cover fitted with an O-ring seal. The cup holds one of the standard round or flat bottom 250 ml. centrifuge bottles. Adapters are available for holding: 2–50 ml. centrifuge tubes; 7–15 ml. centrifuge tubes; and 10–13 x 100 mm. serum tubes.

Centrifuge	Head	No. Cups	R.P.M.	R.C.F.
Size 1, Model SBV	277	4	3000	2000
Size 2, Model V...	277	4	2900	1880
Size 2, Model V...	266	6	2300	1410
Model PR-1.....	284	4	2400	1240

2734 — Duralumin Cup, 250 ml., with screw dome cover and gasket, including 582 rubber cushion — $36.00.

2738 — Wrench, spanner type for tightening screw dome on 2734 — $1.75.

2741 — Adapter, 2-place, for 50 ml. centrifuge tubes, fits 2734 or any standard IEC 250 ml. centrifuge cup — $4.50.

989 — Adapter, 7-place, for 15 ml. centrifuge tubes, fits 2734 or any standard IEC 250 ml. centrifuge cup — $18.00.

2740 — Adapter, 10-place, for 13 x 100 mm. serum tubes, will fit 2734 or any standard IEC 250 ml. centrifuge cup — $21.50.

277 — Head, 4-place, steel pin type for 2734 or 384 cups — $63.00.

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4. Prevents accidental spilling after hood is removed.
5. Identification possible even after hood is removed.
6. Prevents contamination of homogenized milk in warm weather when it may expand and run down inside of hood.
7. Facilitates special caps for straws in schools.
8. Eliminates casein formations by permitting spraying off excess milk from valves which otherwise would remain on pouring surface.
9. Assures clean pouring surface by eliminating possibility of milk becoming trapped between bottle top and hood.
10. Tamperproof – cannot be resealed after once being opened.

The Sealon milk bottle closure is one of the many sanitary paper packaging products manufactured by Sealright. Others are: Thermorex frozen food containers, Kone and Sealking paper milk bottles, Containers for bulk ice cream, Hot Drink cups, Ice Cream cups, Alservis Containers.

Sealright

sealon hood closure

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Why more physicians are prescribing Similac than ever before

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To reduce complications in the first year of life, the full, balanced Similac formula provides fat, protein and carbohydrate closely approximating, in quality and quantity, the content of human breast milk; a full complement of vitamins in adequate amounts; an adjusted mineral content; a soft, fluid curd with zero tension, assuring rapid and easy digestion.

2. *price stability*

In the face of rising food costs, the price of Similac has remained relatively constant. Since 1936, evaporated milk has gone up by approximately 97 per cent, and whole milk approximately 104 per cent.* The price of Similac rose only 18 per cent in the same period.

Percentage Price Increase Since 1936

Since September, 1950, there has been no change whatever in the price of Similac as against increases of 19 per cent and 16 per cent for whole and evaporated milk. Today, Similac with its complete modification and added vitamins is no more expensive than whole-milk feeding, and in many areas actually affords greater economy.

**Milk prices cited from U. S. Bureau of Labor Statistics Bulletins.*

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The Lily-Tulip Cup Corporation now has available for loan . . . *at no charge* . . . two unique and interesting easels enabling you to make a more effective, more dramatic presentation of proper sanitary methods of food service. Each easel is comprised of a series of charts, one on the correct method for washing china and glassware, the other on the proper handling of paper service.

You'll find these easels contain *no "commercials"*. They are simply a public service from Lily designed to make your important training job easier. Over 50 health departments throughout the country are presently using these easels to increase employee knowledge on the importance of sanitary, safe service (and how to attain it) wherever food and drink are prepared or served.

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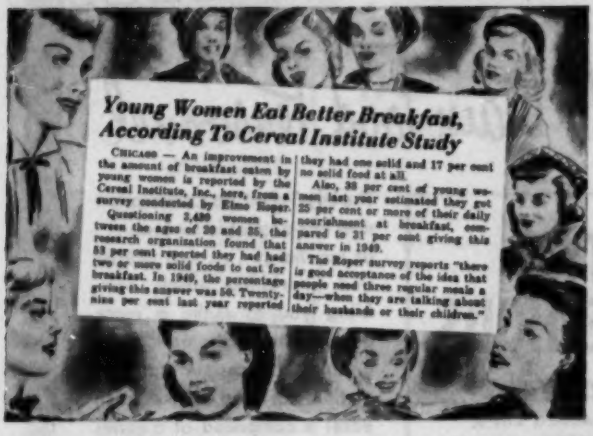

Young Women Eat Better Breakfast, According To Cereal Institute Study

CHICAGO — An improvement in the amount of breakfast eaten by young women is reported by the Cereal Institute, Inc., here, from a survey conducted by Elmo Roper.

Questioning 3,420 women between the ages of 20 and 35, the research organization found that 53 per cent reported they had had two or more solid foods to eat for breakfast. In 1949, the percentage giving this answer was 50. Twenty-nine per cent last year reported they had one solid and 17 per cent no solid food at all.

Also, 36 per cent of young women last year estimated they got 25 per cent or more of their daily nourishment at breakfast, compared to 31 per cent giving this answer in 1949.

The Roper survey reports "there is good acceptance of the idea that people need three regular meals a day—when they are talking about their husbands or their children."

HISTORY OF BETTER BREAKFASTS

In 1943 when the Cereal Institute was established, a study was made of what had been done in the past to promote Better Breakfast habits because with the shift over the years of the population from rural to urban living a change in eating habits took place. It was found that in 1917 during World War I that Uncle Sam had promoted this idea for war production morale purposes. But from 1917 to 1943 we find a big gap wherein the subject was given little or no attention. During World War II Uncle Sam again promoted Better Breakfasts with the slogan "Eat a Better Breakfast and Do a Better Job" and the Walt Disney poster slogan, "You Can't Breakfast Like a Bird and Work Like a Horse." At this time the Cereal Institute cooperated with this program on the national, state, and community levels. When the war was over the government dropped its Better Breakfast Program and the Cereal Institute picked up the Better Breakfast ball and has been carrying it ever since.

The Cereal Institute until recently was alone in planning research, educational, and publicity programs to promote the Better Breakfast Program. Now there are many on the Breakfast Bandwagon and the more the merrier because all doing so are making an important contribution to the betterment of the nutritional health of the nation.

Breakfast Research Grants

Over the years the Cereal Institute has provided research grants to Purdue University, Harvard University, University of Georgia, and the School of Medicine of the State University of Iowa. The purpose of these grants in the main was to explore breakfast eating habits. The Iowa Breakfast Studies have demonstrated that Better Breakfast habits are essential for maximum efficiency, both mental and physical, during late morning hours, that good breakfast habits are beneficial and that a basic cereal breakfast is a sound one.

Third Annual Event

September, when eating habits are re-established for the school and work days ahead, was selected as the ideal month by professional leaders for the promotion on a nation-wide basis to improve breakfast eating habits. This nation-wide event was stimulated by the fact that over 100 cities and towns and several state-wide Better Breakfast Programs have been organized in recent years. This September the third annual Better Breakfast Month is being launched as a contribution to the betterment of the nutritional health of the country.

It's good news that Better Breakfast habits are in the making but more Better Breakfast Boosters are needed because only one out of five children goes to school with a good breakfast. Sixty per cent of teen-age girls neglect breakfast. Sixty per cent of adult women and over 40 per cent of the men skip or skimp on breakfast. You will do a service to your community to promote Better Breakfasts.

CEREAL INSTITUTE, INC.

135 South LaSalle Street, Chicago 3, Illinois

A Research and Educational Endeavor Devoted to the Betterment of National Nutrition

THREE CURRENT SCIENTIFIC BREAKFAST REPORTS

Findings of Iowa Breakfast Studies Reports

Free copies of this interesting 12 page resume booklet are available to you on your letter of request to the Cereal Institute. It describes carefully the effects of altered breakfast habits on both college men and women over a three year period.

Booklet Offered in Cooperation with Weight Control Program

The subject matter in this 24 page attractively illustrated booklet is based on current scientific and library research and is edited by a leading authority. It is available free on your letter of request, and you may have 25 free copies for office use.

Summary of the Iowa Breakfast Studies on Aged Men

This 12 page booklet summarizes the carefully controlled studies on the effects of altered breakfast habits on a group of men 60 to 80 years of age. A free copy is available to you on your letter of request. If you desire 25 for staff or office use please so state in your letter.

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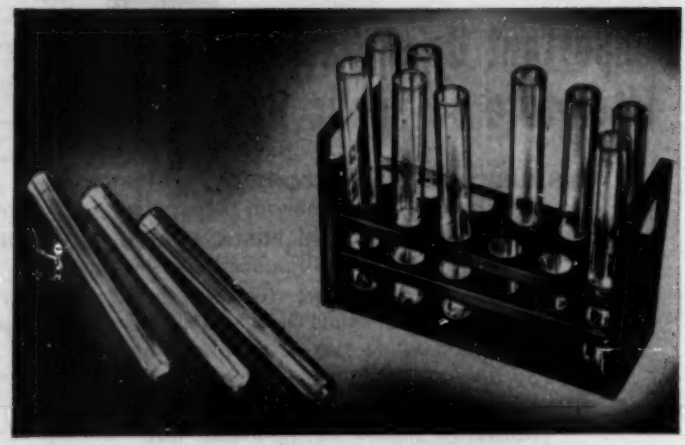
is important in the purchase of laboratory ware, too!



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An Improved formulation for Fungous Infections of the Scalp

New OINTMENT SALUNDEK is reported to be 20-25% *more* effective than the original Salundek formula now widely prescribed for the treatment of Tinea Capitis.

In *New* OINTMENT SALUNDEK, the chlorosalicylanilides, recently synthesized compounds of unusual potency both as antifungal and as antibacterial agents, are added to the ingredients of the original Ointment Salundek to secure greater inhibition of the growth of pathogenic organisms (notably Microsporum audouini) generally responsible for troublesome Tinea Capitis in children.

With *New* OINTMENT SALUNDEK formulation, the average case of this notoriously refractory disease can now be cleared up in a few weeks.

References:

(1) Hopkins, J. G., et al: J. Invest. Dermat., 7, 239-253, 1946.

(2) Sullivan, M., and Fishbein, H. A.: J. Invest. Dermat., 10, 293-299, 1948.

(3) Peck, S. M., and Rosenfeld, H.: J. Invest. Dermat., 1, 237-265, 1938.

(4) Schwartz, L., et al: J.A.M.A., 132, 58-62, 1946.

Composition:

Chlorosalicylanilides	4%
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Salicylanilide	3%

In a carbowax base containing an effective penetrant.

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and Dixie equipment

If it's Dixie Service it has to be clean! Dixie Cups are used but once then thrown away. Everybody gets a fresh, clean Dixie Cup! No need to worry about 'lick and promise' dish-washing . . . no worry about the spread of colds and other contagions! Yes, if there is one best way to assure sanitary fountain service it is with Dixie Cups, Dixie Dishes and Dixie Equipment!

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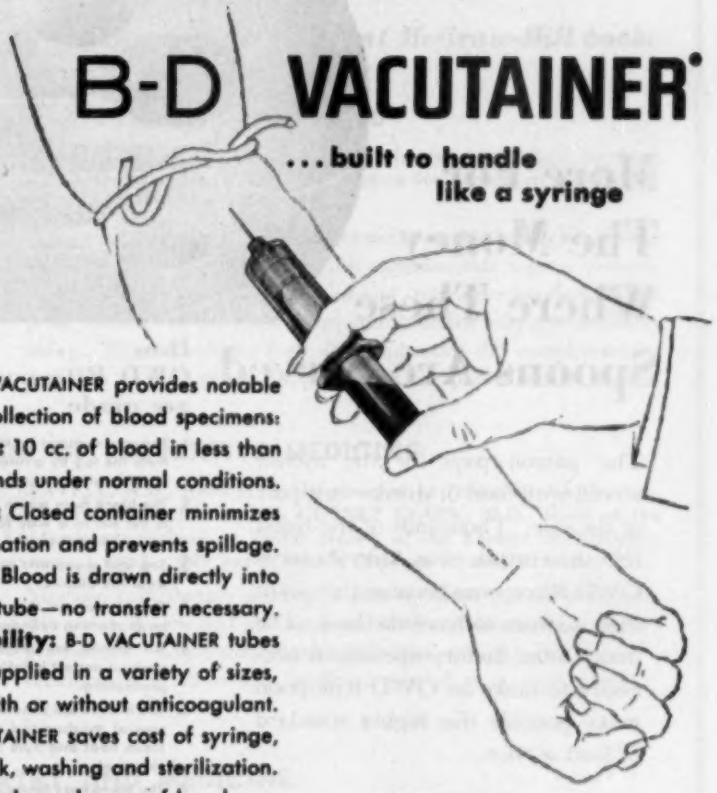
blood collection

B-D VACUTAINER®

. . . built to handle like a syringe



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cleanliness: Closed container minimizes contamination and prevents spillage.

convenience: Blood is drawn directly into specimen tube—no transfer necessary.

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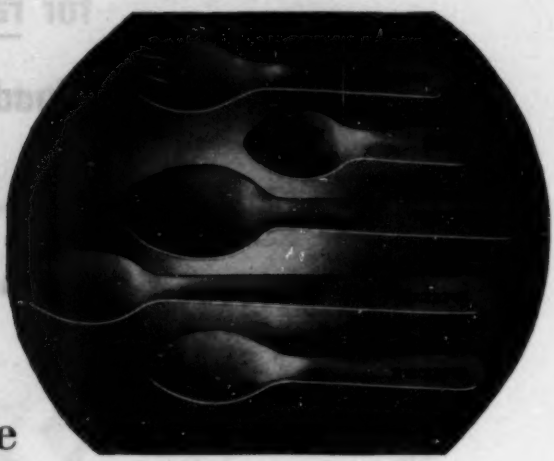

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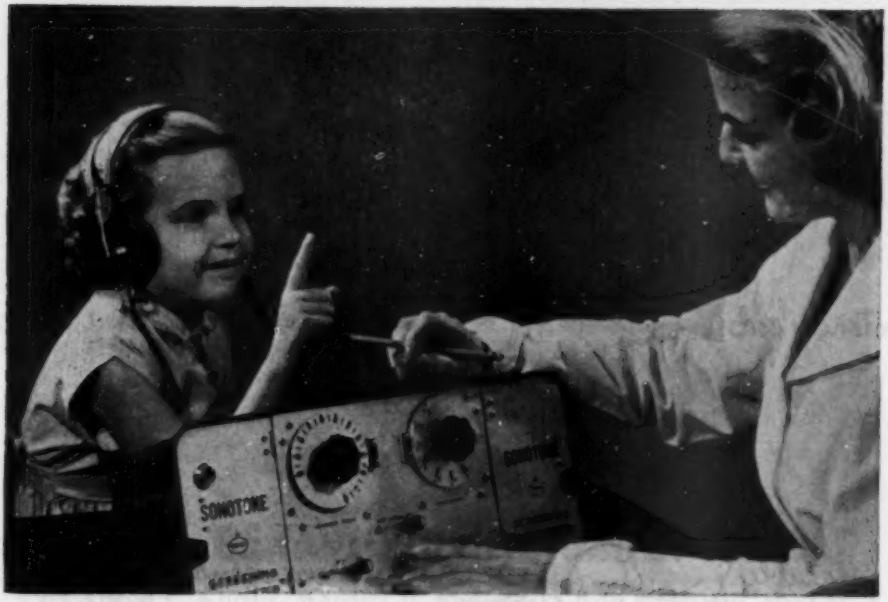

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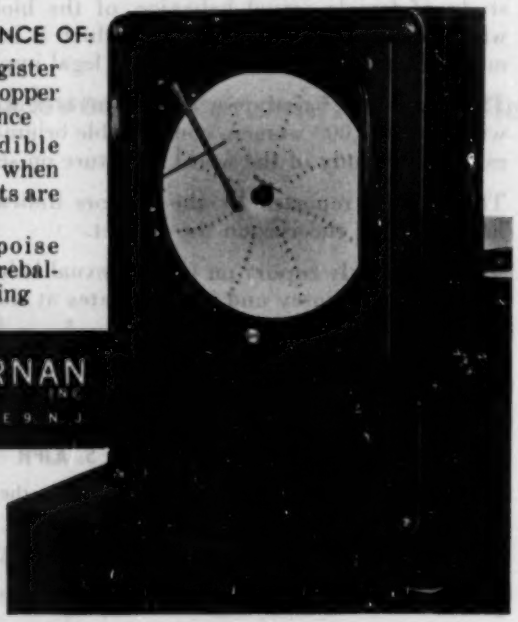

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American Journal of Public Health
and THE NATION'S HEALTH

Volume 43 September, 1953 Number 9

It may be that not every reader of this paper will be moved to take pen in hand to respond spiritedly to the writer's challenge. But of a certainty, each reader with even a small bump of (historical) curiosity will find himself mentally embroiled with the challenger.

The Great Pioneers of Public Health in America 1610—1925

WILSON G. SMILLIE, M.D., DR.P.H., F.A.P.H.A., AND COLLABORATORS

Professor of Preventive Medicine and Public Health, Cornell University Medical College, New York, N. Y.

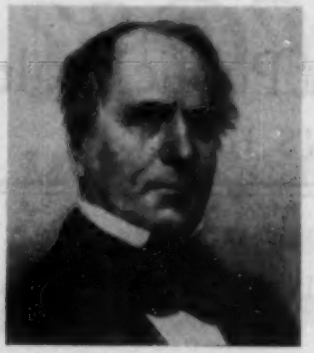
WE have made an attempt in this paper to select a list of the great Pioneers of Public Health in America.

Workers in any field require their heroes. All of us have a need for the great towers of strength to whom we can turn for our inspiration and for spiritual uplift in our periods of weakness, discouragement, and confusion. We may idealize these men and magnify their achievements, but even this exaggeration may enhance the value of their inspiration. Thus, it has been worth while, despite the obvious pitfalls of the task, to seek out the names of those persons whom we may acclaim as the outstanding figures in public health during our whole national history.

The initiation of this study was fortuitous. Some years ago a publisher asked the author to select a list of names of 25 persons who had contributed most effectively to the development of public health in America. It seemed a simple task—a few hours' reflection and a few days' work in the library should suffice.

However, this did not prove to be a simple task at all. What criteria for estimation of true accomplishment should be established? It is obvious that no one has sufficient historical perspective to be able to judge the work of his contemporaries. Thus, the list must be limited to those whose major contributions were made before the present generation.

The real pioneer in any social field is the man who has the vision to foresee



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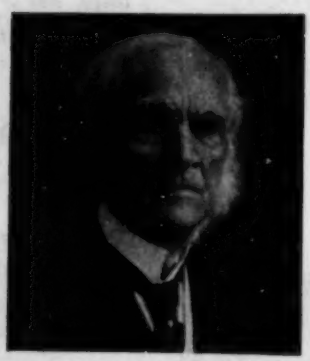

STEPHEN SMITH, M.D.

the future; he must possess the perspective, and also the breadth of vision, to understand the unexpressed and often unfelt needs of the people and be able to formulate a plan which will meet these fundamental needs.

The pioneer is often not a leader at all. The effective leader is the man who keeps just a short distance ahead of his followers. In order to be a leader he must maintain close contact with them. Thus, he is seldom the one who has original concepts; rather his function is to carry the pioneer's ideas into execution. Therefore, the leader usually is not the pioneer, in that he does not originate—but develops and promotes—the ideas of others.

However, the originator of a basic concept cannot always be considered a true pioneer. For example, Josiah Nott in 1848,* suggested that mosquitoes might be an important factor in transmission of malaria, and gave excellent reasons for his unique idea, but he did not follow through with a workable hypothesis and his concept fell on sterile ground.

The social achievements of a nation may be appraised readily if one utilizes the historical method, and, starting at a given period, measures the advances that have been made, generation by genera-

* *New Orleans Medical and Surgical Journal* 4:563, 1848.

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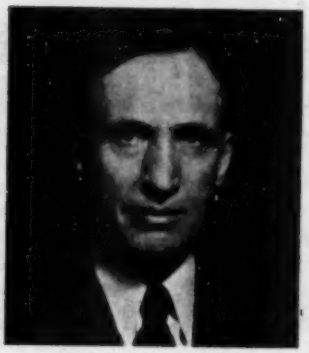

WADE H. FROST, M.D.

CHARLES V. CHAPIN, M.D.

tion. But it is almost impossible to determine just who it was that originated the basic concepts; what individual was chiefly responsible for the initiation of an idea, and who stimulated and fostered its growth. For social advancement is a mass phenomenon and is achieved through the activities of numberless undistinguished, but in the aggregate, very important people.

However, there are certain individuals in each generation who stood out above all the others and who became major instruments in the promotion of the public health of our country. Who are they?

METHODS OF SELECTION

The whole scope of public health was separated into 11 major categories with appropriate subdivisions, which thus totaled 30 separate divisions of interest. We then compiled a list of names of outstanding men and women who had been active in each of these fields. Each list covered the whole historical range of development of that particular subject as it has been initiated and expanded in America. Some of the lists were short; others, for example, epidemiology and sanitary engineering each contained 50 or more names. Eventually a total of more than a thousand names were included in the various lists.

The list of names which was selected for each separate field of activity was then sent to specialists in that particular field. These experts in the special sub-

TABLE 1

Master List of Pioneers in Public Health in America, 1610–1925

Field					
I. Communicable Disease Control	Jacob Bigelow	B. Waterhouse	Zabdiel Boylston	W. T. Sedgwick	*V. C. Vaughan*
1. Quarantine	*Wilson Jewell*	J. H. Griscom	Elisha Harris	A. N. Bell	J. M. Woodworth
2. Tuberculosis	Theobold Smith	H. I. Bowditch	*Hermann Biggs*	S. C. Trudeau	M. P. Ravenel
3. Malaria-Yellow Fever	*Daniel Drake*	G. M. Sternberg	Walter Reed	Henry Carter	W. C. Gorgas
4. Other Contagious Diseases	*C. W. Stiles*	A. L. Gihon (VD)	William H. Park	Simon Flexner	H. T. Ricketts
5. Diagnostic Labs	Hermann Biggs	*William H. Park*	G. T. McCoy	G. M. Sternberg	V. C. Vaughan
6. Immunology	*Theobold Smith*	Simon Flexner	F. F. Russell	V. C. Vaughan	H. T. Ricketts
7. Epidemiology	*W. H. Frost*	Hibbert W. Hill	L. L. Lumsden	E. O. Jordan	W. T. Sedgwick
II. Sanitation	Noah Webster	*W. T. Sedgwick*	Elisha Harris	George Whipple	A. G. Clark
8. Sanitary Engineering	W. R. Nichols	Hiram Mills	J. R. Kirkwood	*Rudolph Hering*	William C. Hazen
9. Food Sanitation	*E. O. Jordan*	H. S. Wiley	H. W. Conn	B. H. Ransom	Samuel Prescott
10. Milk Sanitation	*M. J. Rosenau*	H. W. Conn	William A. Evans	Charles E. North	H. L. Coit
11. Housing	George M. Kober	*Stephen Smith*	Jacob Riis	V. C. Vaughan	Lemuel Shattuck
12. Industrial Hygiene and Sanitation	George M. Kober	*Alice Hamilton*	Andrew H. Smith	Gilman Thompson	William C. Hanson
III. Health Organization Administration	*Lemuel Shattuck*	H. I. Bowditch	Stephen Smith	Charles V. Chapin	J. M. Woodworth
13. Rural Health	*Ezra Hunt*	L. L. Lumsden	Wycliffe Rose	W. S. Leathers	C. W. Stiles
14. Municipal Health	Stephen Smith	Hermann Biggs	*Charles V. Chapin*	J. H. Rauch	Edwin Snow
15. State Health	Erasmus Brooks	R. C. Kedzie	*Lemuel Shattuck*	H. I. Bowditch	Thomas M. Logan
16. National Health	*J. M. Woodworth*	Stephen Smith	J. H. Rauch	J. S. Billings	G. M. Sternberg
17. Vital Statistics	Lemuel Shattuck	E. Wigglesworth	*J. S. Billings*	Cressy Wilbur	Elisha Harris
IV. Maternal-Child Health	Julia Lathrop	*Josephine Baker*	Philip Van Ingen	O. W. Holmes	Henry Koplik
18. Infant Care	*A. Jacobi*	Emmett Holt	Lucien Howe	Josephine Baker	J. H. M. Knox
19. School Health	D. F. Lincoln	*S. H. Durgin*	R. C. O'Sullivan	Ellen Richards	Thomas Wood
V. Public Health Nursing	*Lillian Wald*	Mary Gardner	Mary Beard	Alfred Worcester	Lina Rogers
VI. Mental Hygiene	Benjamin Rush	Edward Jarvis	*Dorothea Dix*	Clifford Beers	Thomas W. Salmon
VII. Health Education	Benjamin Franklin	E. Routzahn	A. N. Bell	*Hermann Biggs*	Lemuel Shattuck
VIII. Training for Public Health as a Career	V. C. Vaughan	*W. H. Welch*	W. T. Sedgwick	George Whipple	M. J. Rosenau
IX. Nutrition	*Joseph Goldberger*	Graham Lusk	Nathan Strauss	A. F. Hess	H. C. Sherman
X. Public Health Law	*Dorman B. Eaton*	H. S. Clark	Erasmus Brooks	J. Ordronaux	Lemuel Shattuck
XI. Voluntary Organizations	*Clara Barton*	L. O. Flick	Hermann Biggs	L. Schuyler	Fred T. Gates

Note: Italicized names are selections for Table 2.

WALTER REED, M.D.

HERMANN M. BIGGS, M.D.

ject were asked to add suitable names and then to select five persons who had made the greatest contributions to their field of public health. From this tabulation, a consolidated list of the 30 categories was prepared with five names in each division. This table was called the "master list" (Table 1). The names in Table 1 do not total 150, since several men, for example Billings, Shattuck, and Sedgwick, had made major contributions in more than one field.

The master list was then sent to 10 distinguished persons who are active in public health in America. Each of these scientists has manifested a scholarly interest in the historical development of public health. These judges were requested to add appropriate names to the master list and to select the names of 25 persons, who in their opinion, had contributed most effectively to the development of public health in America.

The following persons aided in this selection from the master list of the pioneers:

Gaylord Anderson, M.D.
Leona Baumgartner, M.D.
Haven Emerson, M.D.
Iago Galdston, M.D.
Hugh R. Leavell, M.D.
Harry S. Mustard, M.D.
George Rosen, M.D.
Richard H. Shryock, Ph.D.
Franklin H. Top, M.D.
C.-E. A. Winslow, Dr.P.H.

From the selections by this group, a solid consensus was obtained and two lists of names compiled: A list which nominates the person who has been judged to have made the greatest contribution to a special field (Table 2); and a final list of 25 persons who may be considered as the great pioneers in public health in America (Table 3).

Many students of public health will feel that the names of very important persons have been omitted from the final list. It is obvious, for example, that the names of Haven Emerson and C.-E. A. Winslow belong in any "Temple of Fame" which is erected to public health personnel of America. They have not been included because these men are still active in the field. We considered only those whose major life work was completed by 1925, or at least whose great contributions had been made before that year.

It is apparent that the judgments of any group of men, no matter how thoughtful and judicial they may be, is of transitory import. A simple example may be given. Ezra M. Hunt, chairman in the Section of State Medicine and Public Health of the American Medical

TABLE 2

Outstanding Pioneers in Each Field of Public Health, 1610–1925

Field	*Name*	*Principal Contributions*
I. Communicable Disease Control	V. C. Vaughan	Epidemiology of Spanish War, typhoid fever, immunology, public health teacher
1. Quarantine	Wilson Jewell	Organized Quarantine Convention, 1857
2. Tuberculosis	Hermann Biggs	Began basic services in tuberculosis control
3. Malaria-Yellow Fever	Daniel Drake	Diseases of interior valley of North America, 1850
4. Other Contagious Diseases	C. W. Stiles	Epidemiology of hookworm disease
5. Diagnostic Labs	William H. Park	Established municipal diagnostic laboratories
6. Immunology	Theobold Smith	America's greatest medical scientist
7. Epidemiology	W. H. Frost	America's greatest epidemiologist
II. Sanitation	W. T. Sedgwick	Outstanding pioneer in general sanitation, brilliant teacher
8. Sanitary Engineering	Rudolph Hering	Father of American sanitary engineering
9. Food Sanitation	E. O. Jordan	Elucidation of food poisoning
10. Milk Sanitation	M. J. Rosenau	Pasteurization of milk
11. Housing	Stephen Smith	Sanitary Survey of New York City, 1866
12. Industrial Hygiene and Sanitation	Alice Hamilton	Industrial toxicology
III. Health Organization Administration	Lemuel Shattuck	Shattuck Report, 1850
13. Rural Health	Ezra Hunt	Originated modern concepts of rural health services
14. Municipal Health	Charles V. Chapin	America's greatest municipal health officer
15. State Health	Lemuel Shattuck	Originated concept of state health department
16. National Health	J. M. Woodworth	Founded marine hospital service which became the U. S. Public Health Service
17. Vital Statistics	J. S. Billings	Established vital statistics in America
IV. Maternal-Child Health	Josephine Baker	Developed child health as a municipal function
18. Infant Care	A. Jacobi	Father of American pediatrics
19. School Health	Samuel Durgin	Established medical school inspection
V. Public Health Nursing	Lillian Wald	Founded "Henry Street Settlement"
VI. Mental Hygiene	Dorothea Dix	Pioneer in provision for care of mental illness
VII. Health Education	Hermann Biggs	Developed modern concepts of health education
VIII. Training for Public Health as a Career	W. H. Welch	Established Johns Hopkins School of Hygiene
IX. Nutrition	Joseph Goldberger	Pellagra studies
X. Public Health Law	Dorman B. Eaton	Basic public health law
XI. Voluntary Organizations	Clara Barton	Founded the Red Cross

Association in 1877, made an appraisal which was similar to ours. He selected the great leaders of the public health movement in America of that generation as follows:

1. *Scientific Work*
   - Henry I. Bowditch
   - C. F. Chandler
   - J. S. Billings
2. *Practical Workers in the Field*
   - E. M. Snow
   - J. M. Toner
   - Elisha Harris
   - H. B. Baker
   - Stephen Smith

Only two of these men are on our final list of great pioneers.

As one might anticipate, there was considerable disparity of opinion among the judges in selection of the pioneer group. There was almost complete unanimity in the selection of the first 10 names on the list, but considerable diversity of opinion concerning the following 15 names. For example, I believe that Henry I. Bowditch deserves great acclaim because of his work in the organization of the Massachusetts State Department of Health, for his studies in tuberculosis, and for his advanced social concepts. I also favor the name of Clara Barton who organized the American Red Cross almost singlehandedly, and I included in my pioneer list the name of George Whipple, the great statistician and sanitary engineer of the Massachusetts Institute of Technology. I excluded Benjamin Waterhouse from my list since he simply introduced cowpox vaccine in America and had no part in the initial development of this procedure. As will be noted, I was overruled by my associates. Thus, each judge had his special preferences, but the consensus only is used in the final selection.

Many of the leaders in special public

TABLE 3

Final List of Outstanding Pioneers in the Development of Public Health in America, 1610–1925

1. Lemuel Shattuck, 1793–1859
   Founder of Public Health in America. Recommended state and municipal health organizations on a full-time basis, vital statistics, nurses training, public health training, popular health education, etc.
2. Theobold Smith, 1859–1934
   Immunologist, bacteriologist, tuberculosis control. Founded state biological products laboratory.
3. William T. Sedgwick, 1855–1921
   Sanitarian, epidemiologist, public health teacher.
4. Stephen Smith, 1823–1923
   Founder municipal health service, also cofounder, National Board of Health and American Public Health Association.
5. William H. Welch, 1850–1934
   Public health statesman, bacteriologist, public health teacher.
6. Wade H. Frost, 1880–1938
   Established epidemiology as a science in America.
7. John S. Billings, 1839–1913
   Epidemiologist, vital statistician, cofounder, National Board of Health; librarian, hospital administration.
8. Charles V. Chapin, 1856–1941
   Communicable disease control, municipal health administration.
9. Walter Reed, 1851–1902
   Determined transmission of yellow fever by a mosquito.
10. Hermann M. Biggs, 1859–1923
    State and municipal health administration, tuberculosis control, health education.

TABLE 3 *(Continued)*

11. Alice Hamilton, 1869–
    Industrial hygienist, particularly toxicology.
12. George M. Sternberg, 1838–1915
    Diagnostic laboratories, bacteriology, malaria, yellow fever, national health administration.
13. Lillian Wald, 1867–1940
    Established public health nursing in America.
14. Oliver Wendell Holmes, 1809–1894
    Epidemiology, "Contagiousness of Puerperal Fever."
15. Dorothea Dix, 1802–1887
    State and national responsibility for care of persons with mental illness.
16. Benjamin Waterhouse, 1753–1846
    Introduced smallpox vaccine in America.
17. John M. Woodworth, 1837–1879
    Organized Marine Hospital Service, 1872, which became U. S. Public Health Service.
18. Josephine Baker, 1874–1945
    Established child health protection as a function of municipal government.
19. Charles W. Stiles, 1867–1941
    Discovered hookworm disease in the South and lead development of rural sanitation in America.
20. Howard T. Ricketts, 1871–1910
    Pioneer work in virus disease, etiology, epidemiology, and control of Rocky Mountain spotted fever.
21. Daniel Drake, 1785–1852
    Epidemiology of malaria in America.
22. Victor C. Vaughan, 1851–1929
    Pioneer in immunology, epidemiology, sanitation, and teaching of public health.
23. Milton J. Rosenau, 1869–1946
    Teacher of preventive medicine and public health, epidemiologist, milk sanitation.
24. George M. Kober, 1850–1931
    Initiated industrial medicine, exponent of housing, a teacher of public health in medical colleges.
25. William H. Park, 1863–1939
    Communicable disease control, diphtheria immunization, diagnostic laboratories.

health fields will be in strong disagreement with list No. 2, in which one person has been chosen as the greatest single contributor to their specialty. Perhaps they may believe that the most important names have been omitted entirely from their special category in the master table, e.g., Table 1, in which five names are selected to represent each special field.

We invite extensive criticism and suggestions—nothing could be more satisfying to me than an avalanche of personal correspondence relating to differences of opinion in these matters. In fact, one of the judges who consented to help in the selection of Pioneers in Public Health emphasized the fact that this type of appraisal is obviously futile, a time-consuming and thankless procedure—but he then pointed out that it would be quite worth while if the effort resulted in an awakened interest in, and a general discussion of, the important milestones in the historical advance of public health in our nation. This in turn would lead to a more solid appreciation of the extraordinary achievements of the founders of public health in America.

An outbreak of infectious hepatitis in a housing project presented a fine, free field for an epidemiologic study of the disease. The investigators made the most of this opportunity—with findings you will want to know about.

Observations on an Outbreak of Infectious Hepatitis in Baltimore During 1951*†

ABRAHAM M. LILIENFELD, M.D., M.P.H., IRWIN D. J. BROSS, PH.D., AND PHILIP E. SARTWELL, M.D., M.P.H., F.A.P.H.A.

Assistant Professor of Epidemiology, Johns Hopkins University School of Hygiene and Public Health; Statistical Consultant, Cornell University Medical College, New York, N. Y.; and Associate Professor of Epidemiology, Johns Hopkins University School of Hygiene and Public Health, Baltimore, Md.

DURING 1951 an outbreak of infectious hepatitis occurred in a housing project in Baltimore which permitted a rather intensive epidemiological investigation. It was possible to obtain information on several population characteristics in relation to which the distribution of the disease could be studied. In addition, the uniform arrangement of household units within the housing project permitted an analysis of the spatial distribution of the disease which has some implications with regard to the method of study of other infectious diseases. Due to these interesting features, it was considered desirable to place these observations on record.

Attention of the Baltimore City Health Department was called to the existence of an outbreak of jaundice in July, 1951, by the staff of the Baltimore City Hospitals, located about one-quarter of a mile from the housing project. Approximately 30 cases were reported by the staff during the period from April through September although the disease was not legally reportable at the time. There was an increase in the incidence of jaundice in other parts of Baltimore during this period, but it probably was considerably less marked than in the project. The diagnosis of these cases by the hospital staff was infectious hepatitis. The exclusion of other causes of jaundice such as leptospirosis and mononucleosis was based on clinical grounds and appropriate laboratory tests. It was decided to conduct a systematic investigation, the plan of study consisting primarily of a house-to-house survey of the project to determine the actual number of cases that had occurred and their distribution according to various characteristics of the population.

DESCRIPTION OF THE HOUSING PROJECT

This housing project is operated by the Baltimore Housing Authority and is

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† This investigation was carried out while the senior author was the health officer of the Southern Health District, Baltimore City (Md.) Health Department.

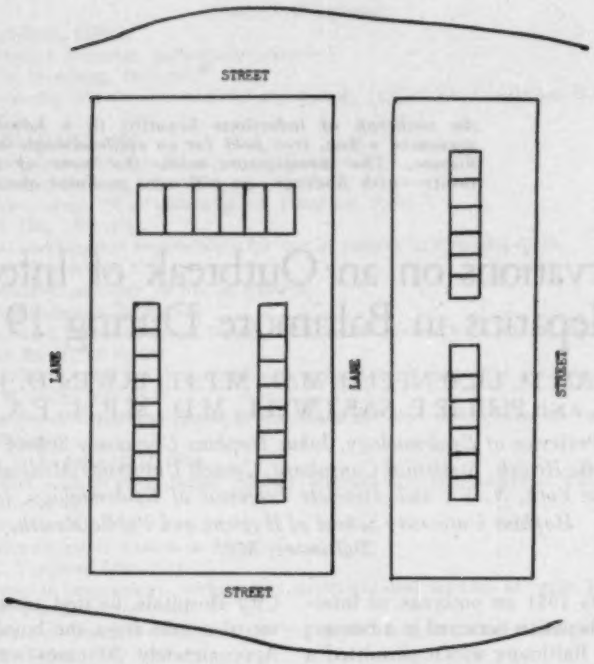

FIGURE 1—Map of section of housing project.

located in the southeastern section of the city in an industrialized area and contains 900 household units. The individual household units are attached in groups consisting of from 4 to 9 units. These groups are arranged in an orderly pattern and separated from each other by lanes and streets, the streets dividing the project into different areas. This can be noted from Figure 1 which consists of a map of a section of the project. Each unit is self-contained and consists of from 3 to 6 rooms, the predominant size being 5 rooms. The rooms are on 2 floors, except for the 3-room units. The project utilizes the city's water supply and sewage disposal systems.

The project was opened in 1943 as war housing with occupancy limited to white persons. At the close of World War II it was converted to a low-income project, the distinction from its previous status being that war housing has no income limitations while low-income projects are restricted to families with incomes below a range of approximately $2,500 to $3,500 a year, the variation depending upon the size of the household. From information made available by the project manager it was possible to obtain a fairly reliable classification of the households with regard to income status. Twelve per cent of the households received assistance from the Department of Public Welfare and 7 per cent, waiting to move, had a total income which exceeded the maximum limit allowable for this type of housing project. The remaining households, 80 per cent of the total, had incomes falling within

the limitations established by the housing authority. The vast majority of the heads of the households were in the unskilled or semiskilled laboring class, their places of employment scattered throughout the industrial and business sections of the city.

The average household consisted of about 4.7 members. Taking into consideration the size of the household units, it would appear that overcrowding was not present. Within the project is a public elementary school (School A) which was attended by approximately 45 per cent of the residents of school age. Another elementary school (School B), located about 10 blocks from the project, was attended by about 10 per cent of the school-age children living in the project, who in turn comprised about 10 per cent of this school's total enrollment. The children attending School A were predominantly in the age group of 5–9 years, while those attending School B were 10–14 years of age. The remaining 45 per cent of school-age children in the project attended public and parochial schools located throughout the city. Included in this group were those children in the age group 14–18 years who attended high school.

METHOD OF STUDY

The survey of the housing project was begun in November and completed at the end of December, the interviewing being done by several physicians and public health nurses. The following information was obtained from an informant, usually the housewife, in each household: name, age, sex, school of attendance or occupation of each household member, the length of residence in Baltimore and in the project. The interviewer also inquired if any member of the household had received any injections during the past year and, if so, in what month. The informant was also asked whether or not any member had had jaundice or an illness with symptoms such as nausea, vomiting, fever, and malaise during the past year. If such an illness had occurred, information was obtained as to date of onset, where and by whom treated, and the diagnosis, if known.

Each of the 888 inhabited dwelling units was visited at least once and approximately 200 were visited twice since nobody was at home at the time of the first visit. The survey team was able to obtain the necessary information from 792, or 90 per cent, of the households. These 792 households contained 3,790 individuals.

In any study of this type certain errors may result from the method of collection of the data. One of these is the incomplete enumeration of cases by interviewing a member of the household. In order to estimate the size of this error, hospital records and physicians' reports were matched with the survey reports. From all these sources, it was found that 101 cases with jaundice had occurred by the time of the survey visit, of which 94, or 93 per cent, were found on survey, only 7 cases being missed by the interviewers. There may, of course, have been other cases unidentified by either method.

By matching these collateral records with the survey reports it was possible to verify the statements with regard to the month of onset of the case. The results of matching the records of 56 cases indicated that in general there was a tendency for the informant to state the month of onset closer to the time of interview than it actually was (in 41 out of the 56 there was no difference, in 7 it was given as one month later than the true month of onset, in 4 more than one month later, and in 4 one month earlier). We may therefore consider that the statement of month of onset was fairly reliable. However, the distribution of the differences would seem to indicate that a statement of dates of onset in time periods shorter than a month

would not be sufficiently reliable to be justified. This creates some difficulty in defining secondary cases in a household, as will be discussed later.

In the survey the total number of cases found among the residents was 117, of which only 8 were cases without jaundice. In view of the small number of nonjaundiced cases and also because of the question of the reliability of a diagnosis in the absence of jaundice, further analysis will be limited to the jaundiced cases.

RESULTS

The 109 cases with jaundice were found to have occurred among 3,790 individuals during the year, giving a total annual attack rate of 2.9 per cent. On the whole, these cases were mild—as evidenced by the fact that only 4 out of the 109 were hospitalized—and there were no fatalities. The distribution of these cases according to month of onset (Table 1) indicates that in the early part of the year there were a few sporadic cases until June when an increase was first noted. During the summer there was an apparent decline followed by an increase to a maximum in September and October. The number of cases in November and December are probably underestimated since the survey was taking place during this period and unreported cases probably occurred in some households subsequent to the survey visit. That the number of cases did decrease in December was the impression of the staff physicians at the Baltimore City Hospitals. The decrease in incidence during the summer is consistent with the seasonal distribution reported by other observers.[1, 2]

TABLE 1

Distribution of Cases of Infectious Hepatitis with Jaundice by Month of Onset, During Period from December, 1950, to December, 1951

December, 1950	2
January, 1951	3
February	1
March	1
April	2
May	4
June	12
July	4
August	10
September	22
October	21
November	15*
December	8*
Not stated	4

* The number of cases for November and December are incomplete since the survey was being carried out during this period

The distribution of cases by age and sex is presented in Table 2 as age-sex specific annual attack rates. The attack rates were highest among children of school age, in the age group 5–14. The total attack rate for females (3.4 per cent) was higher than that for males (2.3 per cent). There seemed to be a tendency for females to be attacked at older ages since the male rate was higher than the female rate for the age group 0–4 years and the female rate markedly higher for the 15–19 age group. This

TABLE 2

Annual Attack Rates of Cases of Infectious Hepatitis with Jaundice by Age and Sex, 1951

Age Group Years	Males			Females			Both Sexes
	Population	Number of Cases	Annual Attack Rate Per cent	Population	Number of Cases	Annual Attack Rate Per cent	Attack Rate Per cent
0-4	370	5	1.4	328	3	0.9	1.1
5-9	381	17	4.5	383	27	7.1	5.8
10-14	290	13	4.5	315	26	8.3	6.4
15-19	157	1	0.6	177	7	4.0	2.4
20 +	578	4	0.1	811	6	0.1	0.1
Total	1,776	40	2.3	2,014	69	3.4	2.9

TABLE 3

Observed and Expected Numbers of Cases of Infectious Hepatitis with Jaundice in Relation to School Attended by Children Resident in Project

School	Number from Project Attending	Number of Cases	
		Observed	Expected *
A	764	43	44.9
B	161	17	9.9
Others	790	18	25.3
Total	1,713	80	80.1

* Expected numbers obtained by applying age-sex specific rates in Table 2 to number attending

may partially be the result of the age groupings used. The age distribution of attack rates is similar to what has been observed in other outbreaks, but the sex difference has not been previously reported.[1] We are unable to explain the differences in attack rates between the two sexes.

Other observers have reported outbreaks of infectious hepatitis as being primarily school epidemics.[1, 3] It was possible to classify the population of school children according to the schools of attendance and to see whether or not the outbreak was localized among those attending a particular school. The method of analysis was to calculate the number of cases to be expected among children attending a particular school from the age-sex specific attack rates of the total population of the project and the age-sex distribution of the children attending that school. These expected numbers were then compared with the observed number of cases. The results are presented in Table 3. There are no remarkable differences between observed and expected numbers.

In any outbreak of jaundice it is necessary to rule out the possibility that transmission was by means of parenteral injections. Twelve cases of hepatitis occurred among 406 individuals who gave a history of having received one or more injections during a year prior to interview, and 12.7 cases would be expected if the age-sex specific rates of the entire population were applied to this group, indicating that injections apparently had no influence. Although the histories as to injections are probably not very accurate, we think that if inoculations had played a major role in transmitting the virus, a difference between observed and expected numbers should have been found.

Socioeconomic status needs to be investigated in studying the distribution of any liver disease, particularly because of the possible influence of undernutrition. A fairly reliable classification of the population with regard to income (which represents one component of what is considered as socioeconomic status) permitted a comparison between 3 socioeconomic groups according to income. The results are presented in Table 4 and show no essential differences between the observed and expected numbers.

The possibility existed that cases of hepatitis might be occurring among households newly arrived in Baltimore or in the housing project, since such households might be particularly susceptible. To study this the population was divided according to length of residence in the city and the housing project and expected numbers were calculated and compared with the observed numbers, the comparisons being presented in Table 5. The observed and expected

TABLE 4

Observed and Expected Numbers of Cases of Infectious Hepatitis with Jaundice According to Income Status of Households Resident in Project

Income Status	Population	Number of Cases	
		Observed	Expected *
Over Income	407	9	12.0
Low Income	2,857	82	76.1
Welfare Recipients	526	18	17.7
Total	3,790	109	105.8

* Expected numbers obtained by applying age-sex specific status in Table 2 to population in each category of income status

numbers are similar for length of residence in Baltimore. The situation is, however, quite different when length of residence in the housing project is considered. There were fewer cases than expected among those who had lived in the project under one year. This is somewhat different from the observations in military populations where recent arrivals in an epidemic area had higher attack rates than the more seasoned troops.[4] There are some possible explanations for the pattern observed in the present outbreak. Probably the most important reason is that those individuals who moved into the project during the year the outbreak was in progress had, on the average, a shorter period of exposure within the housing project than the others. In addition, there exists the possibility that in a housing project, a certain period of time elapses before social assimilation takes place, during which period relatively few extra-familial contacts are made. Admittedly, this is less likely with regard to the children of school age who were chiefly attacked.

One feature of the pattern of communicable disease that is of interest is

TABLE 5

Observed and Expected Numbers of Cases of Infectious Hepatitis with Jaundice According to Length of Residency in Baltimore and in Housing Project

Length of Residency Years	Population	Number of Cases	
		Residency in Baltimore	
		Observed	Expected
Under 1	70	1	1.2
1–4	221	4	3.2
5–9	487	18	13.6
Over 10	2,836	80	81.3
Not stated	176	6	4.4
Total	3,790	109	105.7
Years		Residency in Housing Project	
Under ½	332	0	9.0
½–1	284	3	6.8
1–2	381	12	9.2
Over 2	2,588	91	77.0
Not stated	205	3	5.6
Total	3,790	109	107.6

intrahousehold infection, as represented by secondary attack rates. Ideally, the secondary attack rate should measure the secondary cases resulting from exposure to the first or primary case in the household. These would be selected on the basis that they had occurred within the range of the incubation period of the disease, thereby eliminating most of the coprimaries, i.e., those persons who were exposed outside the household at approximately the same time as the primary case. To differentiate the coprimaries from the secondaries it is necessary to have a distribution of onsets by days or weeks. As was indicated earlier, there exists an error with regard to the date of onset which is small, when considered in terms of months, but it is probably considerable in terms of weeks or days. It was therefore decided to consider as secondary cases all those cases that had occurred in the household during a 2-month period following the first or primary case, recognizing that the rate would be overestimated somewhat by the inclusion of coprimaries. This cruder estimate actually has some advantage for comparative purposes because some such rate has been used in most other reports.[5, 6]

Another difficulty in computing secondary attack rates results from the fact that a certain number of households were visited soon after the time of onset of the first case. Since the reported range of the incubation period of infectious hepatitis is 10–40 days, we eliminated all affected households which were visited within 30 days of the occurrence of the first case. Out of the 79 affected households, 14 were in this category and were therefore not included in the computation of secondary attack rates.

In considering the intrahousehold occurrence of infectious hepatitis, it was possible to study the prophylactic value of gamma globulin. During the outbreak some members of the staff of the City Hospitals offered gamma globulin to the contacts in some of the affected households. This was not done on a systematic basis throughout the period, and it probably varied with the particular hospital staff member on duty. During the survey, interviewers secured information about gamma globulin, and contacts in the affected households were divided into two groups, those who received gamma globulin and those who did not. The secondary attack rates were computed for each of these groups. These data are presented in Table 6. The total secondary attack rate for those not receiving gamma globulin was 8.8 per cent. In other civilian outbreaks reported in the United States, the total secondary attack rates have, on the whole, been higher than that reported here, ranging generally from 20 to 40 per cent. However, in the London outbreak reported by Ford, the total secondary attack rate was 7.4 per cent.[6] Ford commented on the fact that in England secondary attack rates in urban outbreaks are, in general, lower than those in rural outbreaks which have rates of about 20 to 30 per cent. Interestingly enough, all of the outbreaks in the United States, in which secondary attack rates were computed and reported in the literature, were rural ones. Similar differences between rural and urban areas may exist in the United States and may reflect differences in the endemicity of the disease in rural and urban populations. If the infection is more prevalent in the city, there are likely to be fewer susceptibles so that when a focal outbreak does occur the secondary attack rate is lower.

Among the household contacts who received gamma globulin, 74 in all, only one secondary case occurred resulting in an attack rate of 1.4 per cent. This case had received the gamma globulin 2 days prior to onset but was included under the conditions set forth. The true difference in the attack rates may be even greater than the apparent difference

TABLE 6

Age-Specific Secondary Attack Rates Among Total Number of Persons Exposed to a Case in a Household According to Receipt or Nonreceipt of Gamma Globulin

Age Groups Years	Did Not Receive Gamma Globulin: Number of Persons Exposed to Case Who Did Not Receive Globulin	Cases of Hepatitis: Number	Cases of Hepatitis: Per cent
0–4	42	2	4.8
5–9	45	5	11.1
10–14	32	6	18.8
15–19	26	3	11.5
20 and over	83	4	4.8
Total	228	20	8.8

Age Groups Years	Received Gamma Globulin: Number of Persons Exposed to Case Who Received Globulin	Cases of Hepatitis: Number	Cases of Hepatitis: Per cent
0–4	17	1	..
5–9	21	..	..
10–14	13	..	..
15–19	3	..	..
20 and over	17	..	..
Total	71	1	1.4

since some of the individuals said not to have received gamma globulin may have received it. This error would result in a slight increase in the attack rate among those not inoculated and a decrease among those inoculated.

The value of gamma globulin in controlling a common vehicle epidemic of hepatitis was first demonstrated by Stokes and Neefe.[7] Its use was subsequently extended to propagated epidemics by Gellis, *et al.*,[8] who administered it to military squadrons and companies and by Havens and Paul[9] who studied an institutional epidemic. It appears that globulin can also play a useful role in preventing secondary cases among household contacts. In urban outbreaks with apparently low secondary attack rates this may be less useful than in rural areas.

One interesting aspect of the epidemiological pattern of an infectious disease is its spatial distribution in the area being studied. It would be desirable to know whether or not a household has an increased risk of becoming affected, i.e., having one or more of its members becoming ill if it is located next to or near another household which had been previously affected. We might consider this an extension of the concept of intrahousehold exposure, as measured by secondary attack rates, to population units consisting of several households. In the usual epidemic it is difficult to study this since the spatial distribution of the households is not uniform. In this housing project, there is a uniform arrangement of dwelling units as can be noted from Figure 1.

In order to obtain an over-all idea as to whether or not the risk varied from one household to another, it appeared reasonable to see if a binomial distribution would fit the observed distribution of the number of affected households within the sections. If the probability of becoming affected is the same in all sections, the observed data should be well approximated by a binomial distribution. The data were analyzed in this manner and the results are presented in Table 7 along with the theo-

TABLE 7

Distribution of Observed Number of Sections of Household Units According to Number of Affected Households Compared to Expected Numbers Derived from the Binomial Distribution

Number of Affected Household in a Section	*Observed Number of Sections*	*Expected Number of Sections According to Binomial Distribution*
0	70	56.9
1	33	43.9
2	11	16.1
3	6	3.5
4	2	0.5
Total	122	120.9

retical expectations according to the binomial distribution.

Household units are arranged in sections of from 4 to 9 households. The binomial expectations were computed for each group of sections containing the same number of household units with $p = 0.1$ (since 10 per cent of total households were affected) and $n =$ number of household units in the section. The expected numbers presented in Table 7 consist of the sum of the expectations for each group of sections. From Table 7 we note that the binomial gives a relatively poor approximation to the observed data as both tail ends of the distribution have excessive observed numbers. This indicates that the probability of a household becoming affected varies from section to section. One cause of this variation may be that the presence of an affected household in a section influences the probability of other households becoming affected. An attempt was therefore made to obtain a more direct method of indicating the "contagiousness" between households.

The method developed required an arbitrary classification scheme for varying degrees of contiguity, the household units being placed in 4 categories, A, B, C, and D, depending on the physical proximity of each unit to an affected household (as depicted in Figure 2). In classifying the households, it was decided that if a street intervened it would be considered a barrier and the classification scheme would end at this point. On the other hand, if the affected household adjoined a lane (or only a small distance separated this section from the next), the next category of the classification was skipped. For example, if a household on the edge of a section was affected, the first household in the next section was placed in the B category. Another problem arose in connection with the occurrence of secondary cases, and it was decided to consider the household again as an affected one if at least one month had elapsed between the 2 cases. (Actually there were few instances in which cases were separated by more than one month). Beginning in January and considering those households in categories A, B, C, and D in relation to the first one involved in the area as being exposed to the risk of becoming affected, we determined the percentage of related households that became affected during February. This was done for successive monthly time periods during 1951 and summed up for the entire year. The results are presented in Table 8. It is apparent that close proximity to an already affected household increases the risk of a household becoming affected. It must be borne in mind that these

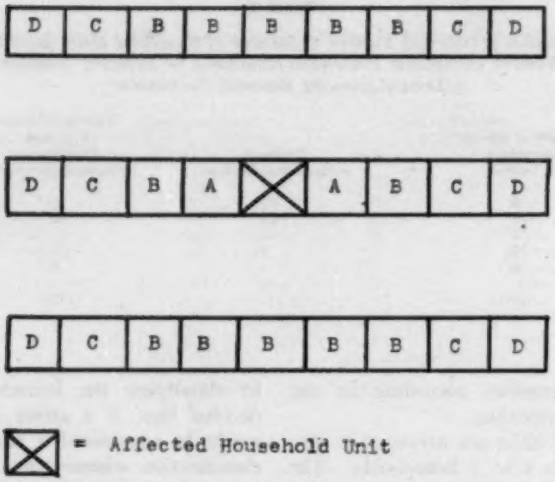

FIGURE 2—Classification of household units relative to an affected household.

percentages are basically monthly attack rates. The over-all percentage of affected households in the project was 10 per cent for the year and an average monthly rate would therefore be a little less than 1 per cent.

At the peak of the outbreak, i.e., in September and October, the monthly rate reached 3 per cent. It is apparent that the risk of contagion is markedly increased only for the most closely situated households—Class A—while those in Classes B, C, and D are fairly similar to the general average. This pattern may be indicative of the mode of spread of the virus. On hypothetical and intuitive grounds we could perhaps assume that a disease spread by the airborne route would have an increased risk for categories B to D, gradually declining, of course, but not merely limited to Category A. On the other hand, a disease spread by the fecal-oral route, might be assumed to have an increased risk in Category A and very little, if any, increase in categories B, C, and D, which is the pattern of this outbreak. These considerations are compared with the observed data in Figure 3.

It must be emphasized that these in-

TABLE 8

Number and Per cent of Affected Households in Various Categories of Association with Other Affected Households

Category *	Total Number of Households in Category	Affected Households	
		Number	Per cent
A	130	8	6.2
B	724	12	1.7
C	341	3	0.9
D	295	5	1.7

* See text for discussion of method of classification

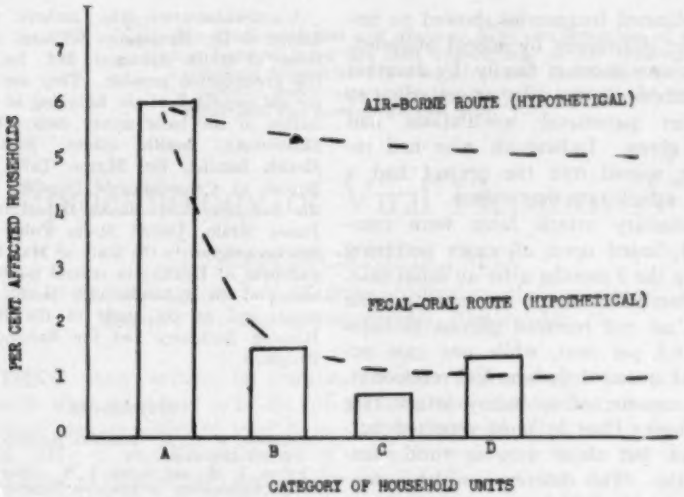

FIGURE 3—Comparison of observed per cent of affected household units in various categories of proximity with other households with hypothetically expected distribution based on different modes of transmission of virus.

ferences with regard to mode of transmission are purely speculative since we have no similar patterns for diseases with known modes of spread with which the present data could be compared. For the moment it is sufficient to indicate that the observed pattern might be utilized as a basis for applying gamma globulin in civilian populations to stop an outbreak. In institutional outbreaks it is feasible to administer gamma globulin to all the inmates. Although this is impossible in civilian life, it would be feasible to administer gamma globulin to the households which are in close proximity to an already affected one.

Another way of viewing the spatial distribution of a disease in an area is by means of spot maps of cases in successive time periods. These were prepared and indicated that cases would develop in one area of the project in one time period and in the next time period cases would occur in a contiguous area while there would be none or a marked decrease of cases in the original area. The disease seemed to spread from an initial focus near the center of the project in a way quite similar to the radial type of spread often seen in measles and poliomyelitis. This has also been observed in England.[10] The rate of spread appears to be slower than in outbreaks of measles and poliomyelitis, but this may be a result of the longer incubation period rather than differences in the mode of spread.

SUMMARY AND CONCLUSIONS

An outbreak of infectious hepatitis in a housing project in Baltimore during 1951 was studied by a house-to-house survey of 90 per cent of the 888 resident families. Over a one-year period the attack rate was 2.9 per cent. On the basis of comparison with physicians' and hospitals' reports, the case enumeration is considered fairly reliable. The age group 5–14 years experienced the highest attack rate and females a somewhat higher rate than males. Comparison of

age-adjusted frequencies showed no important differences by school attended, by income status of family, by duration of residence in the city, or according to whether parenteral inoculations had been given. Individuals who had recently moved into the project had a lower attack rate than others.

Secondary attack rates were computed, based upon all cases occurring during the 2 months after an intial case. The secondary attack rate among those who had not received gamma globulin was 8.8 per cent, while one case occurred among those who had received it. The unprotected secondary attack rate was lower than in most reported outbreaks, but these were in rural communities. This difference, which is consistent with British reports, suggests a higher endemic level of infection in urban communities resulting in a smaller number of susceptibles available for infection upon the occurrence of a focal outbreak.

Study of the spatial distribution of the disease showed that persons in households immediately adjacent to an affected household had an increased risk of attack over those at a greater distance. On the basis of certain assumptions regarding differences in the pattern of distribution of diseases transmitted by the fecal-oral route as compared with the air-borne route, it is considered that the present data are more consistent with the fecal-oral route as the means of transmission of the virus.

ACKNOWLEDGMENT—The authors are indebted to Dr. Huntington Williams, commissioner of health, Baltimore, Md., for making this investigation possible. They are grateful for the assistance of the following in the collection of the basic survey data: Dr. John Skladowsky, health officer, Southeastern Health District, Dr. Myron Tull, director, Bureau of Communicable Diseases, both of the Baltimore City Health Department; Dr. James Strain, United States Public Health Service assigned to the State of Maryland Department of Health; to several public health nurses of the Baltimore City Health Department, and to the staffs of the Baltimore Housing Authority and the Baltimore City Hospitals.

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The epidemiologist will discover here confirmation of what he has learned from his own experience, or his reading, about infectious hepatitis. The rest of us will find much that is new to ponder over—especially the contributions of the unnamed volunteers, the human guinea pigs.

Epidemiology of Viral Hepatitis A*†

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RATHER than outline in routine order what we believe to be the epidemiologic characteristics of viral hepatitis A (IH), it would seem to be of greater value to bring sharply and briefly into focus a single institutional outbreak of this disease—one of the most interesting to my knowledge that has been described—from which most of the known essential epidemiologic points can be gleaned. These points will then be extended to include certain additional data from the natural disease under field conditions.

The epidemic in question has been presented more fully elsewhere in papers by the author, together with Drs. Capps, Bennett, Drake, Ettinger, and Mills,[1-3] and will only be used here as a skeleton to be clothed by the accumulating epidemiologic facts from other studies.

In 1948, I was apprised by Dr. Henry Sauer of Chicago of an endemic hepatitis with jaundice in a Chicago orphanage which had been occurring since 1942 and for which he was requesting assistance. It was not present, he said, in the infants and young children of the orphanage nor in the mothers who came there to deliver their infants, but only among the new student nurses shortly after they were admitted to the institution for training. At the time he called me new interns also were contracting the disease soon after they entered and the knowledge of its presence was limiting applications of interns and nurses for admission. The story pointed clearly to an endemic disease over the six-year period he described.

Until further studies could be conducted a palliative and diagnostic measure was instituted, the injection of Red Cross gamma globulin,[4] 0.06 ml. per pound body weight, into all new student nurses within one to one and one-half months of their admission after November 7, 1948. Previous to this date, from January 1, 1946, to November 7, 1948, 33 per cent (or 42 of 144) of the incoming students had developed jaundice soon after admission. For the succeeding 10 months up to September 1, 1949, no jaundice occurred in the 36 nurses admitted during this period, except in one nurse who received her globulin only two days preceding her onset. Her jaundice fortunately confirmed the continuing endemic nature of the disease.

In order to aid in further study of the orphanage, particularly as related to the possible source of infection, a collaborative study was arranged with Dr. Richard Capps's group at the St. Luke's Hospital, Chicago. Our Philadelphia

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TABLE 1

Endemic Hepatitis—Chicago Orphanage

1946	*1948 November 7*	*1949 September 1*	*1950 January 1*
139 Nurses 44 Jaundice 32 per cent		20 Nurses 9 (6) Jaundice (3) Without Jaundice 45 per cent	
	36 Nurses 1 Jaundice * 3 per cent	35 Nurses 1 Jaundice † 3 per cent	

* Given gamma globulin two days before onset
† Not exposed to infective children until the fall of 1949

group arranged for a study of skin tests [5] with irradiated infected amniotic fluid (hepatitis virus A) on both children and nurses, and for the presence of virus in the stools in certain children (by means of volunteers). The evaluation of the orphanage personnel, the tracing of possible sources, and hepatic function tests on key individuals (children and adults) were supervised by the Chicago group.

Liver function tests revealed over 40 infants and children who had evidence of hepatitis without jaundice—only one case of jaundice—in the last six months of 1949. Over 80 per cent of the student nurses who developed jaundice from January 1, 1946, to November 7, 1949, had done so in a period starting about three weeks after entering, and ending about three weeks after leaving, the fourth and fifth floors which housed the diseased children. As far as could be determined none of the mothers during the six-year period contracted jaundice, even though they were exposed to the student nurses and ate and drank the same food and water. In order to obtain further information, and thus to eradicate the source of the endemic disease, the injections of globulin were stopped on September 1, 1949, and 20 new student nurses were admitted. Within two months of their admission, nine had developed hepatitis (45 per cent), six of these with jaundice, while of the 35 injected student nurses remaining from the student nurse admissions of the previous 10 months, only one contracted jaundice. The exposure of all these nurses to the fourth and fifth floors was arranged to be similar, except that by mischance the one nurse previously mentioned had not been on these floors until shortly before her disease—or after September 1, 1949 (Table 1).

The skin tests were conducted on all readily available children and nurses. Without the knowledge of the Philadelphia group, the Chicago group of workers insured a random testing by placing many of the 28 children in the receiving ward on the wards of the upper floors and vice versa, and by thoroughly mixing those nurses with and without histories of jaundice in "line-ups" for testing. The value of the skin test was clearly indicated by the fact that only three, or 10 per cent, of the randomized children from the receiving ward had positive tests, while over 80 per cent of the nurses with histories of jaundice had positive tests.

Stool preparations from two children who had symptoms and positive liver function tests characteristic of hepatitis without jaundice for five and 15 months, respectively, were administered orally to

TABLE 2

Infectious (Epidemic) Hepatitis and Homologous Serum Hepatitis

Observation	*Infectious Hepatitis*	*Serum Hepatitis*
1. Incubation period	20–40 days	60–120 days
2. Secondary cases not related to injection	Common	Uncommon
3. Human biological materials	Feces and blood	Blood
4. Age susceptibility	Uncommon after 40	Apparently common after 40
5. Oral administration of infective serum	+	—
6. Heterologous immunity	—	—
7. Protection with gamma globulin	+	—
8. Carriers of virus	Feces (?)	Blood
9. Skin test hepatitis A virus	+	—

two groups of volunteers, five in each group—one stool preparation to one group and the other preparation to the second group. In each group one volunteer contracted hepatitis with jaundice, each with a short incubation period of a little over 20 days, thus demonstrating the presence of at least two chronically active cases of hepatitis A or of intestinal carriers of this disease. (Either designation would seem appropriate, depending upon definition.)

Investigation of sources had revealed a lack of proper technics of the nurses in washing their hands between the changing of diapers, etc. When instructions on such technics were faithfully followed—despite the discontinuance of gamma globulin and a full admission rate for student nurses—no jaundice was contracted and no cases have occurred from that time (December, 1949) to the present (Table 2).

This striking outbreak strongly supports certain epidemiologic points which additional data elaborate and extend:

1. Hepatitis A has a fecal-oral type of spread, whether endemic or epidemic, and this includes water, food, and milk-borne epidemics. It does not appear to be spread by nasopharyngeal secretions. In the Chicago orphanage over the period of seven years outlined, one would have expected jaundice in at least one of the mothers who had intimate contact with the nurses if the disease had a respiratory route of transmission. The finding of virus in the stools of the infants and the cessation of spread apparently by simple improvement in the cleanliness of the nurses could hardly have resulted in eradication of the disease in the nurses if it had a respiratory route of spread from child to nurse.

Water-borne outbreaks are now well recognized [6-8] and food [9] and milk-borne [10] epidemics have been described. The water-borne outbreaks, all of an explosive type, have been traced to fecal contamination of water supplies.

Also, nasopharyngeal secretions from typical outbreaks of hepatitis A, obtained preceding, during, and following the disease, have not produced hepatitis when administered by mouth to volunteers, as demonstrated with Neefe [6] in a large outbreak in a Pennsylvania summer camp. Confirmation of this has also more recently been obtained by our group of workers in Philadelphia. Also, the virus has not been demonstrated in the urine (by use of volunteers).[6]

2. Epidemics of hepatitis A have a mean incubation period of 20–35 days. Such an incubation period apparently can be increased by either attenuation

of or a decrease in the number of viral bodies in the infective material. For instance, we have shown with Drs. Neefe, Baty, and Reinhold that when contaminated water stands for a long period at room temperature,[6] or when it is treated by flocculation and filtration, the incubation period may be increased.[11]

3. Individuals may become chronically active cases and carry hepatitis virus A in their stools as demonstrated at the Chicago orphanage.

4. Gamma globulin in doses as small as 0.01 ml. per pound of body weight is effective at least as a temporary protective agent against hepatitis A and will stop the occurrence of cases in exposed individuals who are injected more than about seven days before their expected time of onset.[12] This can be demonstrated by comparing control groups with injected groups under field conditions or in institutions.

In the Chicago orphanage, and elsewhere, there has been a strong suggestion that the passive immunity in many cases, as apparently in a considerable group of the 35 injected nurses, may be changed into a passive-active immunity if the individual injected with globulin continues at risk during his waning, passive immunity.[12]

5. The severity of hepatitis A in general is reciprocally related to age. This is particularly true in the youngest age groups, 0–3 or 0–4, when jaundice is a rare complication of hepatitis, as clearly demonstrated in the Chicago orphanage.[3] Here again, as in poliomyelitis, it appears best to have experience with the virus at an early age. Man appears to have changed the conditions under which such experiences occur and thereby has increased the hazard of both poliomyelitis and hepatitis.

6. The skin test recently developed for hepatitis A suggests the possibility that "A" may be a virus of uniform antigenic properties (similar to measles or mumps viruses) which produces permanent immunity.[13] That most of the population have had hepatitis A by 30 years of age accords well with the highly effective protection afforded by gamma globulin.

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Here you will find a down-to-earth analysis of what reasonably may be expected from our current, nation-wide effort at poliomyelitis prophylaxis via gamma globulin. This paper is a "must" for all in public health, for it is on a subject about which we need to know the truth and to speak with understanding if we are to maintain the respect of the intelligently curious with whom we come in daily contact.

Administrative Problems in the Use of Poliomyelitis Immune Globulin*

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DURING the present poliomyelitis season about one million young persons throughout the nation will receive an injection of immune globulin. If this program is wisely administered, about 500 to 1,000 cases of poliomyelitis may be prevented, but well over 95 per cent of the cases in the nation will remain unchecked. This mass injection procedure will have no influence on the polio epidemic of next year, and may even involve the possibility of depriving several thousand of those persons who receive immune globulin of the benefit of naturally acquired immunity.

We are embarking on a health program which is notable for its lack of balance between the public attitude, the available and potential facilities, and the prospect of meeting the total health need. Balance between need, popular attitude, and facilities is characteristic of a sound program; and these three components are worth analyzing in the problem of poliomyelitis.

DEMONSTRATION OF NEED IN POLIOMYELITIS CONTROL

The health need in communicable disease control involves that component of the natural history of the disease which is accessible to efficient modification through some public health measure. The governing factors of poliomyelitis have been studied more intensively than those of many other diseases. The reservoir and source of infection are known to be human carriers of the specific viruses. The great majority of carriers can only be recognized by elaborate tests which give theoretical information but which cannot be used in the control of a given situation. The transmission is probably inherent in daily human contact and can only be partly modified by general sanitary conduct and avoidance of unusual contacts. While control directed toward reservoirs of infection does not offer promise, much attention is paid to host resistance against poliomyelitis.

The importance of immunity—presence of specific antibodies—as a health need in poliomyelitis has been investi-

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gated for over 30 years. The accumulation of knowledge made slow progress as long as monkeys were the only experimental animals. The discovery that mice are susceptible to Type 2 virus was the key to extensive studies in serological epidemiology, of which those of Paul, Hammon, and others are typical. The technic of growing virus in tissue cultures is a recently opened highway to increased information.

Until a few years ago, immunity as a governing principle in poliomyelitis was largely supported by deductive reasoning, circumstantial evidence, and retrospective inference. It was demonstrated that infection with poliomyelitis virus leads to development of antibodies in the infected individual, whether or not he develops the disease. The serum from such individuals in sufficient dosage prevents disease in animals inoculated with large doses of virus. It was recognized early that people develop antibodies about a hundred times more frequently than they develop typical poliomyelitis as a result of infection. The significance of antibodies was inferred from population studies showing that poliomyelitis disease is more prevalent in those age groups and in those geographic areas with the highest proportion of persons having no measurable poliomyelitis antibodies.

The question of whether antiserum would modify already evident disease was one of long standing. It took a decade or two to convince medical scientists that treatment of poliomyelitis cases with convalescent serum was ineffective. Direct demonstration of the reason for its failure was afforded recently by Bodian and others, who convincingly showed that the onset of paralytic symptoms coincides with, or is preceded by development of antibodies, and that the virus is present in the blood some days before the symptoms. Antibodies can only prevent disease if they are present in the blood before the virus invades, which is about 4 to 7 days before clinical symptoms appear.

Until a few years ago one link was missing in the chain of evidence that antibodies can prevent poliomyelitis disease—namely, a direct demonstration that persons who are given antiserum do not develop polio. The difficulty consisted in providing antibodies in a sufficiently large amount and in such concentration that passive immunization of healthy human beings could be employed. Edwin J. Cohn provided the means of separating natural human antibodies in the form of gamma globulin. It was shown that gamma globulin did contain polio antibodies as well as other antibodies. Monkeys were inoculated with human gamma globulin in doses from 1 ml. to 5 ml. per pound, and they resisted infection with polio virus given within a few weeks after the injection.

Experimentation with human beings was made during the summers of 1951 and 1952, and the dramatic design of the field trials and their results in Utah, Texas, and Iowa are common knowledge needing no repetition. The group of scientists, sponsored by the National Foundation for Infantile Paralysis, used the immune globulin provided by the American National Red Cross and chose a procedure which, in spite of labor and expenditure, would give a significant result in the shortest possible period of time. It required cooperation of large communities, and a great deal of publicity was involved. With the early publication of the results, it soon became evident that the original purpose of the field experiment was forgotten in the triumph over a "new miracle" preventive which was neither new nor miraculous. In other words, a specific scientific demonstration that antibodies can modify or prevent polio in man was misinterpreted to be a demonstration of a means of controlling poliomyelitis.

Our major need in poliomyelitis is, in

all probability, the establishment and maintenance of sufficient immunity in the entire population. The only practical means of achieving this end would be active immunization with vaccines which can produce a permanent antibody level. The field trials showed that the necessary level is reasonably low. Such a vaccine is now an experimental fact, but mass production is a problem still unsolved.

ATTITUDE ASSESSMENT

Immune globulin can never fulfill our ultimate need because of the short duration of its effect and the limited amount in which it can be produced. However, the public seems so obsessed with the possibilities of gamma globulin that the limited facilities seem only to enhance the demand. It is worth noting that official efforts have all been directed toward improvement of supply facilities, while no assessment of the demand attitude has been made. Generally, we assume that people want immune globulin, but we have only vague ideas of what the extent of the demand is going to be, and how much an effective campaign could decrease such demand. In this respect, authorities seem not to have made a sufficient effort.

FACILITIES AND COMPETITIVE DEMANDS

The problem of facilities has enormous implications from an administrative viewpoint. A number of official, professional, and private agencies are involved, partly to secure the product and to manage an equitable distribution and partly to safeguard other health programs which would be jeopardized if all efforts were directed toward procurement of poliomyelitis immune globulin.

The dilemma of the limited supply and the competition for other uses of blood and blood derivatives places the administrative problem of poliomyelitis immune globulin in a unique position in the history of public health and medicine. Other biologics (insulin, pneumococcus serum, penicillin, and the rest of the antibiotics) have had times of scarcity which were overcome by increased production. There were problems of equitable distribution which, however, were less intricate than those affecting gamma globulin because the need was defined by sick persons, not by an uncertain number of persons who might become ill; and in no case was the question of competitive use of the biologic encountered.

Many medical men, at least in Massachusetts, are not convinced of the utility of using immune globulin as a preventive of poliomyelitis; but, certainly, no one can afford a passive attitude and allow free and unlimited use of the product—because of its established usefulness for other purposes. Even aside from these considerations, the organization of the distribution of poliomyelitis immune globulin is complicated by the multitude of agencies concerned.

Agencies concerned with procurement, allocation, and distribution of immune globulin are:

A. Government
  1. Federal
    Office of Defense Mobilization
    National Research Council
    National Institutes of Health
    Communicable Disease Center
  2. State
    Public Health Departments
B. Voluntary
    American National Red Cross
    National Foundation for Infantile Paralysis
C. Manufacturers of Biologics
    Private Industry
    State Biologic Laboratories
D. Professional
    American Medical Association
    State Medical Societies
    American Public Health Association
    Association of State and Territorial Health Officers

The role of the Office of Defense

Mobilization is primarily to secure continued supply of blood and blood products. Its authority rests on the Defense Production Act of 1950, under which the ODM has allocating authority over civilian blood resources, provided there is a military implication requiring such allocation.

The National Research Council has formed a group of experts to advise the ODM about ways to secure the available blood and products for the existing program of military and civilian concern before products were allocated for poliomyelitis. The experts have also laid down outlines for the use of blood products. The National Institutes of Health have set up requirements for safety, purity, and biologic potency for poliomyelitis immune globulin. This procedure applies to all biologics which, after experimental trials, are released for public use. Henceforth, two kinds of gamma globulin are licensed by NIH: Immune Globulin (human), intended for use in measles and hepatitis; and Poliomyelitis Immune Globulin, reserved for that disease, alone. The scientific distinction between the two kinds is that the latter is tested for content of polio Type 2 antibodies. The distinction is of evident importance for the practical administration, since the globulin reserved for polio is so marked on the label of the container.

The health departments occupy a key position in the program. Their duties are both to continue the program for measles and hepatitis and to administer the small allotments for poliomyelitis intelligently. The importance of the health department is expressed in a statement from the Office of the Defense Mobilization: "The State or Territorial Health Officer shall have full responsibility for the distribution of immune globulin allocated to him. He shall decide the modes of prophylaxis which are most appropriate for use within his jurisdiction."

In other words, the ODM, after having assigned the quotas of the two kinds of immune globulin to the states, leaves final decisions as to its use to the state health officer. Consequently, the health officer finds himself with a major responsibility of restricting use of the prophylactics rather than promoting their application—a somewhat unusual task for an agency which devotes most of its efforts to promote slowly progressive health programs.

In no instance has a state health department declined to take responsibility, in spite of its difficult and controversial nature. Planning is somewhat facilitated by the guidance found in reports from the National Research Council committees, but each state will have to form its own advisory committee to meet the local situations and to incorporate advice from local medical, health, and citizens' organizations.

Of the two national voluntary agencies, the American Red Cross holds the access to the raw material—human blood. The achievements of this organization in war and peacetime have established it as the largest agency in the nation for blood collection. With the demand for poliomyelitis immune globulin, its governing body has taken the sound attitude of yielding all responsibilities for distribution of blood products to the ODM. The last annual figures amounted to 4.2 million pints of blood, of which approximately 40 per cent is used as fresh blood in civilian hospitals. The remainder is used for defense purposes: blood for Korea and for fractionating to plasma, albumin, and gamma globulin for military and civil defense purposes. The variety of uses for human blood is emphasized in campaigns for blood donations, but the additional use of immune globulin was employed as a new incentive to donate this year, and sometimes one could not help getting the impression that donation of one's pint of blood would prac-

tically secure protection of his child against poliomyelitis. These exaggerations are undoubtedly due to misunderstandings by enthusiastic volunteer workers, since the official Red Cross statements regarding polio immune globulin have been reasonably moderate. The truth is that not more than one pint out of four to five can be used for poliomyelitis immune globulin, and that it is a human impossibility to obtain over 50 million pints of blood annually—which would be necessary to meet the potential demand for the preparation. It is doubtful whether the present national figure of annual donation can ever exceed four million pints.

The National Foundation for Infantile Paralysis has been the major force that turned the public attention to gamma globulin. The foundation has contributed remarkably to development of scientific knowledge about this disease, its natural history, its clinical management, and its causative agents, which will be remembered in medical history when the practical use of polio immune globulin will be considered a curiosity of the 1950's!

The foundation's foresighted purchase of 11 million dollars' worth of gamma globulin from the so-called "free-market" stock, produced by private industry, has emphasized the unusual nature of immune globulin administration. The manufacturers had the choice between their traditional free trade—with sale of their products directly to practicing physicians—and the risk of creating a black market that might follow the free sale of a product in excessive demand. The decision of the manufacturers of gamma globulin to sell their stock to the national pool led to a disappearance of purchasable immune globulin for any purpose. This private supply amounted to considerable quantities, derived from blood of paid donors and from placentas.

The fact that all immune globulin is now in the national pool places a further load on the responsibility of allocating authorities, both state and federal. A large commercial supply would have provided leeway for those who wished to buy immune globulin for emotional security when they could not fulfill the strict criteria based on epidemiologic evidence. That demand was foreseen to exceed the former total free supply, so unstable and unjust situations were likely to follow.

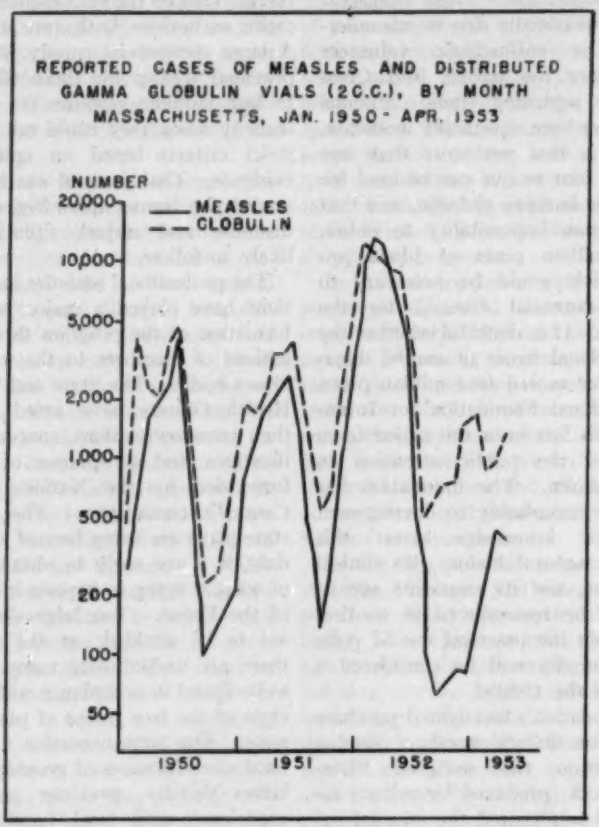
The professional societies and associations have played a major part in the formation of the program through delegations of members to the various advisory bodies. The State and Territorial Health Officers have acted jointly in their recommendations, concerning modifications and acceptance of the plan forwarded by the National Research Council's committees. The individual state plans are being formed and, at this date, it is too early to obtain a review of what is going to happen in each state of the Union. Too large discrepancies are to be avoided; at the same time there are undoubtedly many variations to be found in accordance with the principle of the free choice of plans in each state. The implementation must follow local circumstances of geography, population density, previous poliomyelitis experience, and local familiarity with the use of immune globulin in other communicable diseases.

THE LOCAL STATE PROBLEM

The last part of this discussion will logically be devoted to considerations pertaining to Massachusetts with its 4.7 million people. The Commonwealth is favored with excellent medical and scientific facilities and with leading men of medicine and public health. Poliomyelitis has, so far, not reached excessive epidemic proportions in Massachusetts.

Gamma globulin has been used more extensively against measles in Massa-

FIGURE 1



chusetts than in any other state. The medical profession is accustomed to using it against measles, and the demand, therefore, seems to have reached a sound balance through five years, in which the amount of gamma globulin in 2 ml. vials distributed each year has equalled the annual number of reported cases of measles (Figure 1).

The monthly distribution of globulin has also followed the seasonal measles incidence for the last three years until October, 1952. The discrepancy which occurred in the last six months, with distribution of immune globulin approaching a 10-fold excess over the measles cases, might be interpreted as a result of the publicity which started after the announcements of the result of the poliomyelitis trials of last summer. However, in fairness to the recipients of gamma globulin in Massachusetts, it should be pointed out that measles during the spring of 1953 showed an extremely low incidence after the record epidemic in 1952, so that we have no comparable earlier situation. Moreover, hepatitis has been more prevalent lately

TABLE 1

Results of Globulin Field Test 1951–1952

Weeks After Injection	Cases		Cases	
	Gelatin Group "Control"	Globulin Group	Assumed Prevented	Per cent Prevented
1	16	12	4	4/16 = 25
2–5	39	7	32	32/39 = 82
6–8	13	7	6	6/13 = 45
9+	5	5	0	0/5 = 0
	73	31	42	42/73 = 58

with more frequent use of gamma globulin. Yet, in May, 1953, we had 450 cases of measles and 102 cases of hepatitis reported, with 1,600 ml. immune globulin distributed. Further limitation is necessary before Massachusetts is down to the quota established by the ODM, whereby the immune globulin supply for measles and hepatitis is 1.5 ml. for each reported case of measles.

MASS INJECTION VERSUS HOUSEHOLD CONTROL

The field trial of last summer left the impression that a number of similar mass injection programs would follow this summer. The polio foundation has emphasized its willingness to participate and aid in such a conspicuous undertaking. However, the six months of expert analysis of the epidemiological justifications for mass injections has led to classifying this procedure as an expensive and rather ineffective use of a limited supply. Only one-third of the national supply is supposed to be allocated for this purpose; almost 60 per cent is intended for household contacts.

Early in November, 1952, the Massachusetts Health Department established a preliminary policy governing the use of immune globulin in which it was stated that household contacts were to be the only persons for whom a limited supply could reasonably be used. The national policy appeared some months later to follow the same line of reasoning, but some compromise was apparently made with those who were in favor of large-scale injections.

The guiding index is the expected effectiveness of a certain portion of gamma globulin, expressed as the number of persons who will have to be injected in order that one case of polio may presumably be prevented. The only available data are those of the field trial, but some inference can be drawn from our general epidemiologic information about the disease.

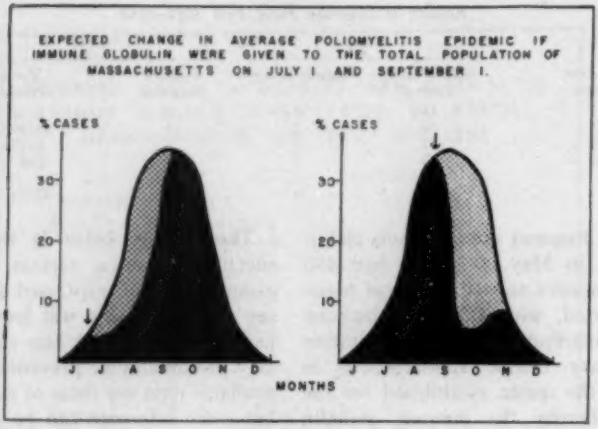
Exposures are rarely recognizable, but one can state the probability of exposure and the likelihood of developing disease under various epidemic circumstances. The field trials gave a rough idea of the effectiveness of the immune serum in those who were expected to develop disease. The data are given in Table 1.

The only statistical inference which can be made from this table is that immune globulin at some time within eight weeks after injection can reduce development of poliomyelitis. The degree of effect at a given time is only suggestive and cannot be given with reasonable certainty. However, these are the only data available and they will be used in the following attempt to anticipate results of the use of immune globulin.

Let us first boldly assume that the supply is unlimited and it is possible to administer the product to all the citizens of Massachusetts. The effect would then depend on the period in the epidemic season at which such injections took place (Figure 2).

The full curve is the average percentage distribution of cases in Massachusetts for the last 10 years. The

FIGURE 2


EXPECTED CHANGE IN AVERAGE POLIOMYELITIS EPIDEMIC IF IMMUNE GLOBULIN WERE GIVEN TO THE TOTAL POPULATION OF MASSACHUSETTS ON JULY 1 AND SEPTEMBER 1.
% CASES
30
20
10
J J A S O N D
% CASES
30
20
10
J J A S O N D
MONTHS

effect of immune globulin is of much shorter duration than the extent of the epidemic. All experimental data point to the fact that antibodies do not influence the excretion of virus. Hence, the transmission will go on in spite of fewer cases, and the progress of the epidemic is unchanged when the effect of the globulin has disappeared. The optimum condition will be to administer the globulin at the time when one-half of the cases have already occurred, and even then only 30 per cent of the year's cases would be prevented. This provides some idea of the inadequacy of immune globulin as a mass procedure, and it is further emphasized by the knowledge that next year's epidemic would appear in unaltered proportion so that the whole procedure would have to be repeated.

The next consideration is mass administration within a limited area and a limited population with high incidence of poliomyelitis. The effectiveness of immune globulin would, then, depend on the time of administration as well as the total incidence during the season (Table 2).

This table shows the enormous amounts of immune globulin which are presumably necessary to save one person from the effects of poliomyelitis. The situation becomes more realistic when we remember that about 4,000 doses are allotted for use in Massachusetts. Only during an epidemic of extreme severity in one part of the state would that amount have the prospect of preventing more than one case.

On the basis of data presented to the Massachusetts Committee on Allocation of Immune Globulin only 3.7 per cent of about 75,000 cases in the last 20 years occurred in town outbreaks with incidence of more than 100 per 100,000 and none in the vicinity of 1,000 per 100,000. It would be absurd and impossible from a public relations standpoint to reserve the material until such an outbreak occurred in a minor com-

TABLE 2

Estimated Number of Doses Needed to Prevent One Case of Poliomyelitis

Time of Season	*Total Annual Incidence per 100,000*		
	1,000	*200*	*40*
July 1	624	3,120	15,600
August 1	290	1,450	7,250
September 1	328	1,640	8,200
October 1	671	3,355	16,775

munity, when 95 per cent of the disease is scattered all over the state.

The arguments for giving gamma globulin to family contacts rest on the fact that a relatively high attack rate occurs among family members of a case of poliomyelitis. Various studies show that one out of 100 family members develop poliomyelitis subsequent to the case, which is a higher rate than in any community epidemic. The time distribution is quite different from that of a community epidemic.

Table 3 shows that almost 70 per cent of the cases in family outbreaks are in the first week subsequent to an initial case when immune globulin will have a relatively low effect. Higher effect is expected in the 30 per cent of cases that occur later than one week so that the total preventions in families would amount to about 40 per cent.

The amount of immune globulin required to prevent one case among family contacts would approach 250 doses, if given to all persons. However, if restricted to persons under 30 years of age, the effectiveness would be increased somewhat, possibly to 150 persons injected for each case prevented, which is one-half of the amount necessary in a severe community epidemic.

In an average epidemic in Massachusetts, one family out of 30 has one or more subsequent cases. With an average of four family contacts under 30 years of age, 2,000 persons would be injected with immune globulin in an average polio season so that most of the total supply would be spent for family contacts.

Since it is essential that immune globulin be given immediately after a reasonable diagnosis is made, it is inevitable that some injections are given where the diagnosis is doubtful. The National Advisory Committee suggests two plans for its administration, one restricted to verified cases, another extended to contacts of suspected cases. The lines between the two situations are difficult to draw and the diagnosis and the decision must rest with the physician in charge of the patient.

Other epidemiologic situations may approach the high risk of the household contact. In camps or child institutions with one case of polio there is a fair likelihood of subsequent cases. The risk is evaluated in Table 4.

TABLE 3

Time Distribution of 1,166 Family Cases Subsequent to Initial Case *

Weeks	*Observed Per cent*	*Expected Prevented Per cent*
1	69.2	17.3
2	23.6	19.3
3+	7.2	5.9
	100	42.5

* Prepared from data presented by Dr. A. D. Langmuir at a meeting of the Epidemiological Society and from data compiled by Dr. R. F. Feemster.

TABLE 4

Attack Rates in Children per 100,000

Average for Massachusetts	35	
Maximum for "	115	
Camps with 1 initial case	174	554
" " 2 " "	754	
" " 3 " "	2,800	
Household contacts (New York Data)	1,920	

The data for camps are computed from basic figures collected by Ingalls and Rubinstein for New England Camps over a period of 14 years. One case only in a camp of about a hundred children brings the risk of subsequent cases up to levels of the risk during a severe epidemic, the presence of more cases increases the risk to that of household contact.

Hence, there is justification for regarding a summer camp in respect to poliomyelitis as equal to a household. The high risk after introduction of cases, must not be confused with the risk of getting polio in camps, in general, which is not higher than in the population as a whole.

TABLE 5

Forecast of Outcome for Poliomyelitis Season 1953
Massachusetts

		Expected Number Persons	*Expected Cases*	*Cases Prevented*
Immune Globulin	Household Contacts	2,400	8	12
Immune Globulin	Other Contacts	1,600	2	1
No Globulin		2,156,000	577	0
Total Persons Under 30 years		2,160,000		

Cases expected in globulin injected group—10/4,000 = 250/100,000
Cases expected in group without globulin—577/2,156,000 = 27/100,000
Total cases prevented by 4,000 globulin doses—13

Giving immune globulin to a total camp population in case of poliomyelitis would not measurably drain the state supply, since it only happens infrequently and the camps usually comprise around 100 children.

In summary, the plan for distribution of polio immune globulin in Massachusetts is based on traditional experience of the state's physicians in use of gamma globulin for other diseases. Essentially, it is a program of preventive medicine centering around the care of the family. We do not advocate use of community injection, although an extreme situation may occur where the state would apply to the ODM for additional immune globulin for this purpose.

With the practicing physicians having the major responsibility for the use of immune globulin, the function of the health department is to arrange a system of distribution through its biologic stations, so that the nearest depot is within reasonable distance of all physicians. A certain control is unavoidable, requiring the physician to report the case of poliomyelitis and the family roster as a receipt for the immune globulin.

Evaluation of the effect of immune globulin is extremely difficult. No single physician will gather enough experience to be able to judge whether one person or another were saved from the disease by the immune serum. Even the experience for this state over a year would not permit significant conclusions. A uniform collection of data over the nation is necessary. The analysis will be difficult and equivocal, since adequate controls are not to be had. There was one certain effect of the last field trial: it is no longer possible to conduct an unbiased study of poliomyelitis immune globulin in human populations.

In conclusion, it may be interesting to speculate on the expected results of this season's use of immune globulin, assuming that we are going to have the average 600 cases, that the product will be used largely in family contacts, and that persons under 30 are eligible. We would then arrive at the following computation (Table 5).

We hope to save 13 cases of poliomyelitis, but we will not be able to prove it. On the contrary, the statistics will show that ten times more cases occurred among those who received immune globulin than among the unsatisfied two million persons who did not!

That is the kind of statistic which one gets when scientific experiments are turned to public use.

Though the technical parts of this paper will prove of concern chiefly to the laboratory worker, its implications and recommendations should be known to all who have to do with environmental sanitation.

Use of Tergitol-7 Triphenyl Tetrazolium Chloride Agar as the Coliform Confirmatory Medium in Routine Sanitary Water Analysis

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IN attempting to sterilize a medium by flowing steam, Pollard [1] encountered considerable difficulty with a contaminating Gram-positive bacillus which was quite resistant. He tried to lower its resistance by the addition of detergents, and discovered that the most effective was Tergitol-7 (sodium heptadecyl sulfate). Further study revealed that 0.005 per cent Tergitol-7 inhibited many Gram-positive bacteria, including *Micrococcus pyogenes* var. *aureus*, *Bacillus subtilis*, and *Bacillus mycoides*. Chapman [2] added 0.01 per cent Tergitol-7 to an agar medium and observed that it produced constant and rather characteristic colonial growths of *Escherichia coli*, *Aerobacter aerogenes*, and other Gram-negative bacteria. He later [3] modified this medium by the addition of 0.04 per cent of 2, 3, 5-triphenyl tetrazolium chloride (TTC) per liter. This medium (here designated "T-7") was reported to serve differentially for *E. coli* after only 6–10 hours incubation, and to show 30 per cent greater productivity than other differential and bacteriostatic media. Scaletti, *et al.*,[4] found T-7 agar to be the medium of choice for the quantitative detection of *E. coli* in rat feces.

We have repeatedly confirmed the finding that the medium is apparently completely inhibitory to common Gram-positive bacteria, and noninhibitory to most Gram-negative bacteria, especially coliforms. In our experience, this medium yields as many colonies of coliforms as standard nutrient agar, and 40 to 50 per cent more colonies than either Endo or Levine's eosin methylene blue agar, a substantially higher figure than reported by Chapman.[3]

Surface growth of typical *E. coli* (of the + + − − IMViC formula)[5] produces round, generally entire colonies 2–3 mm. in diameter, very slightly raised, uniformly light yellow in color, with or without a light rust-colored center. Typical *A. aerogenes* (of the − − + + IMViC formula) produces round, convex, generally entire colonies, 3–5 mm. in diameter, raised, glistening, very often slimy, of yellow color, usually with a deep rust-colored center. Coliform "intermediates" (of variable IMViC

formula) produce either type colony. Several species each of the genera Salmonella, Proteus, Pseudomonas, Serratia, and *Shigella paradysenteriae* produced irregular, raised colonies, all dark red in color. *Shigella dysenteriae* consistently failed to grow on the medium. The differential nature of the medium is thought to reside in the fact that for typical *E. coli* on T-7 agar, under the conditions of use, TTC is not a satisfactory hydrogen acceptor, whereas for the majority of the Gram-negative organisms the TTC is reduced promptly to a deep red formazan. Credence is lent to this concept by the work of Straus, *et al.*,[6] who advocated use of TTC as a sensitive dehydrogenase indicator.

The ingredients in T-7 agar, in grams per liter, are as follows: Bacto proteose peptone No. 3, 5.0 gm.; yeast extract, 3.0 gm.; agar, 15 gm.; Tergitol-7, 0.1 gm.; bromthymol blue, 0.25 gm.; 2, 3, 5-triphenyl tetrazolium chloride, 0.04 gm.; final pH 6.8–7.0. Chapman recommended that the TTC be sterilized separately as a strong solution and that the proper amount be added aseptically to the melted and cooled agar before distribution in Petri dishes. He did not specify the method of sterilization, and a study was made of requisites of preparation. For this purpose, an 0.5 per cent aqueous solution of TTC was prepared, part of which was sterilized by Seitz filtration and part by autoclaving (121° C., 15 minutes). Media were then prepared by addition of proper amounts of sterilized TTC to the sterilized base, and a comparison of the colonial appearances of test organisms was made to see if there were colonial differences because of the sterilization method applied to the TTC solution. There were no differences.

In another trial, all ingredients were dissolved together before sterilization. The completed medium was distributed in test tubes, 15 ml. to each tube, and sterilized by autoclaving (121° C.) for 15 minutes. Comparisons of colonial growth and differentiation on this medium and one prepared according to Chapman's directions, gave results more favorable to the latter. Hence, for best results, the medium should be prepared as recommended by Chapman, i.e., the TTC should be added to the sterilized, liquefied base prior to distribution in Petri dishes.

Since T-7 medium is appropriately used only by surface inoculation, it is advisable, but not essential, to pour plates 18–24 hours before use, and hold them at room temperature to eliminate excessive surface moisture. Continued storage should be in the refrigerator. Not less than 15 ml. should be used per Petri dish. In our experience the medium is very stable: poured plates may be kept in the refrigerator at least 6 weeks and still be used with satisfactory results in confirmation or enumeration, provided that they do not lose too much water.

The medium is inoculated by any streaking or smearing method which will result, after incubation, in well isolated colonies. Observation should be made within 12 to 24 hours incubation at 37.5° C. Better differentiation is observed in the shorter rather than the longer time, a property shared by other differential and many enrichment media.

We have used T-7 agar comparatively with Endo agar and EMB agar, on over 100 water samples, from wells and springs, which gave positive presumptive tests for coliforms, using standard methods procedures.[7] Equal numbers of presumptively positive samples were confirmed (IMViC) from Endo and EMB as from T-7, but considering all properties, T-7 agar presents the following advantages over Endo and EMB:

1. It is extremely restrictive.
2. It exerts no inhibitory action on any coliforms.
3. It is very stable.
4. Differentiation is clear-cut and rapid be-

tween coliforms and other Gram-negative bacteria frequently encountered.

This statement is not to be interpreted to mean that observation of colony type permits classification of an isolate as typical *E. coli*, typical *A. aerogenes*, or "coliform intermediate." Like Endo and EMB, T-7 merely indicates the likely IMViC reactions of the isolate, but we feel with considerably greater accuracy. After a little experience, novices learned to prophesy correctly the IMViC reactions of at least 90 per cent of the isolates from positive presumptive tests, merely from colonial appearance on T-7 agar.

It is hoped that this report will stimulate further comparisons of T-7 with Endo and EMB for isolation and confirmation of coliforms. It is now suggested that T-7 agar replace Endo and EMB as the confirmative medium for coliforms, in the standard method of water analysis.[7, 8] Incidentally, it seems likely that this medium, because of its high productivity for coliform growth, should prove quite satisfactory in some of the proposed procedures for direct enumeration of coliforms in water.[8]

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1954 World Population Conference

A world population conference of experts will be held in 1954, probably in August to "exchange ideas and experience on population matters." Approved by the Economic and Social Council, it will be held under the auspices of the United Nations in collaboration with the International Union for the Scientific Study of Population. The secretary-general of the UN will invite experts in their individual capacities, nominated by governments, by nongovernmental scientific organizations concerned, and by the interested specialized agencies. Each person invited will have the opportunity to present a scientific communication up to 4,000 words.

Neither the exact date nor place of meeting have been announced. Information as to program and facilities for participation may be had from the administrative director of the International Union for the Scientific Study of Population, who is serving as secretary of a subcommittee on arrangements, Professor Frank Lorimer, American University, Washington 16, D. C.

Herein, a city planner reminds health workers how closely interwoven are his functions and theirs.

The Team Approach to a Better Environment*

Relation of City Planning to Public Health

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CITY or town planning has been variously defined as the "technic of sociology," the "gospel of social regeneration from the physical point of view," a "public health act." In fact, in Great Britain, the laws relating to town planning and housing have been enacted as parts of the general health laws, as illustrated in the numerous references and papers on this subject in the *Journal of the Royal Sanitary Institute*. This tendency is an indication of the relationship between town planning and health.

Like municipal sanitation, city planning has experienced rapid progress in the last few decades, and the sanitary or the public health engineer and the health officer must take cognizance of this fact. The progress of modern times, which has brought people to live together, created inherent complications in sanitation, overcrowding, and congestion—problems which can be solved only through good planning.

Good planning requires the cooperation of several groups of individuals, mainly the city officials, including health officers, who have a background of long and accurate knowledge of their community, the citizens' organizations, and the professional planners, whose aim is not only to design but to preserve the beauty and the amenities of a territory as well. With the aid of these groups, planners can draw up plans or revise them conforming to the highest standards that the science of city planning is able to develop, always bearing in mind that the region, the city, the community, the neighborhood, as well as the dwelling unit, constitute the home and social life.

City planning is not limited to a single profession, and many technicians in various fields have made important contributions toward the orderly and efficient growth of cities or their progress.

The professional city planner to be successful has to be a coordinator; he must call for special advice in various fields as applied to the layout or extension of communities; he must possess a sense of harmony and beauty and the scientific knowledge to analyze facts. In practice, physical planning, which is only a part of community planning, requires many trained individuals to master its different problems in the unified process of all the elements of a city plan which must be considered concurrently in order to establish the future needs and direction of growth of communities. To this end, the resources and knowledge, in the divisions of their respective fields, of the engineer, the

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architect, the landscape architect, the sanitarian, the jurist, the economist, the demographer, the geographer, and the sociologist are not only necessary but indispensable to the coordinator of planning activities.

Similarly, the health commissioner or director is the coordinator of public health activities and must call for special guidance on the different phases of his work which correspond in a general way to those of the various sections of the American Public Health Association and related organizations.

Experience has shown that, in any growing community, the need of applying sound planning principles has arisen. After wise provision for streets, parks, and sites for public buildings, come demands for public reservations. And, as time goes on, the community requires the prevention of overcrowding and improper use of buildings through zoning. All these things must be accomplished by specially trained technicians.

The principal problems facing planning agencies are not always clearly understood. The main purpose of city planning is the orderly and coordinated development of long-term programs of physical improvements of the city territory as well as the control of the current use of private property. The contemplated physical improvements are included on master plans which must be based on data covering pertinent information as to how matters stand and how they got that way. Let us note that the health officer and the planner have in common, among many other things, the need for dependable population and other social data of their city which can best be obtained through close collaboration.

A distinction exists between the master plan of a city and its city map or general, or official, plan. The latter indicates thoroughfares, open spaces, and public utility routes. In a word it gives a picture of present conditions and sometimes of projects accepted (but to be realized at a later period). The master plan is entirely different: the future is its concern and it shows the desirable tendencies of city development. It is a synthesis of measures to be taken in order to solve the numerous problems pertaining to the rational planning of a city, to its extension, and sometimes to its partial rebuilding. It is a means to an end.

In connection with the development of a city plan there are numerous problems which must be considered, principally public services and public utilities, such as water supply and sewerage systems. If these are mostly composed of underground conduits concealed below thoroughfares, there are also visible structures which may or may not be attractive features. There is nothing, in either the design or operation of water works and sewage plants which precludes such architectural treatment of the buildings and landscaping of the ground as would make the ensemble a definite asset to the community.

The distribution of water is an engineering problem, but the necessity of applying to this question the principles of city planning is becoming more acutely necessary in order to determine in a reasonably accurate manner, in advance of development, the trends of both population and building use. This interpendence, if properly worked out, may achieve important economies in construction, operation, and maintenance. Let us add that a master plan is intended to promote harmony between the natural and artificial elements of a city territory and that transportation and public services are among the most fundamental problems to be solved to develop private property. Moreover, it is of interest to point out that in unplanned and unzoned communities, not benefited by effective laws and efficient agencies, the direction and intensity of growth is often established by public

utility companies for their particular needs, and the information obtained from them, when available, is of great value to planners and sanitarians.

It becomes more clearly evident that cities must be planned and their activities correlated in order that their growth may be accompanied by the stabilization of real-estate values, the preservation of amenities, and by measures to provide against haphazard housing and misguided commercial and industrial developments. This can be obtained by proper zoning. Moreover, the city plan should provide for adequate traffic and transportation lines, public thoroughfares, parkways, as well as for the methodical and appropriate distribution of open spaces, parks, recreation, playgrounds, etc.

Any progressive community must become convinced that the development of its territory can no longer safely be left to take place haphazardly according to the shortsighted interests of certain land speculators, but that such development must be planned to make the best of all opportunities to conserve values in material wealth and beauty and to enhance public health.

In my own community, the City Planning Department is, to all intents and purposes, a municipal unit responsible to the city administration. Besides master planning, this department includes two divisions: Building Inspection and Control of Smoke and Atmospheric Pollution. The director, a former sanitary engineer of the Health Department, is the coordinator of planning activities taking rank among the other departmental heads with similar prerogatives and responsibilities. Close cooperation exists between the City Planning and Health Departments as two representatives of the latter department have been included with the director of public works and a group of city councilors on the advisory committee of the official planning agency. The department benefits from professional consultants and does not neglect the public relations aspects of its activities. This means, in other words, that planning work in the Canadian metropolis is established on the same permanent basis as the other administrative agencies such as Public Health, Public Works, Finance, Police, Fire, and Public Welfare Departments.

There are many established actual and potential controls over private development, but the most direct is zoning which has many objectives and justifications. It is known that zoning was invoked on the grounds of health and safety, in order to assure light, air, ventilation, and access to individual buildings. From these beginnings there developed a broader concept by which the establishment of appropriate limitations of population and building densities over wide areas might keep private development in some promising economical relationship to public improvements. Zoning looks to the future and protects property values and is not applied so much to cure past errors but to prevent their repetition.

Rezoning is required in a great number of communities because of the shortcomings in existing ordinances which preceded the adoption of a comprehensive plan. The latter, in the light of modern conceptions in city planning, should logically have preceded the zoning ordinances. It is now realized that these ordinances should have been framed to implement such a plan. The consequences are that, with the carrying out of the master plan, the revision of existing resolutions or by-laws is inevitable, especially in connection with the excessive allowances made for commercial use districts in the original ordinances.

The examples of certain cities indicate that reasonable proportions of urban land should be allotted to each required residential, commercial, and industrial

use. Therefore, zoning not related to a master plan and sound economic policy may cause serious losses. These ordinances must not be arbitrary, discriminatory, or unreasonable, but should secure the benefit of their protective features in the conservation of property values. Such ordinances should be, within certain limits, flexible—they must be adapted to the character and social development of the community. They should therefore be comprehensive and quantitative and the allotments of areas, densities, and other restrictions should be based upon adequate, basic knowledge about existing conditions and trends—population growth, land use, and economic development—and above all related to an up-to-date master plan. To this end, extensive land-use data and the records of sanitary authorities are indispensable.

All countries have their own housing problems which have manifested themselves when the number of dwellings did not correspond to the demand and when the conditions of shelter and overcrowding were such as to be a menace to public health. There were usually, at first, periods of regulatory legislation. It was found later, owing to the high cost of labor and materials, that private capital was unequal to the task of providing cheap dwellings for the lower-wage groups. As the building of houses was no longer profitable nor self-supporting, a shortage of accommodation was brought about which required special legislation, appropriation, or subsidy to meet the ever-growing deficiency.

It has been said that the greatest indictment of our civilization during the past decades was that no adequate environment for living was provided and this matter becomes a matter of general public concern. This indictment holds true in both urban and rural communities, until such time as they shall be free from slums.

One word only on open spaces and appropriate provision for recreation, both active and passive. Such spaces are often inadequate or maldistributed. Because of the growing tendency for the people to have more leisure at their disposal, the provision of a sufficient number of parks and playgrounds has increased substantially in the last decades. Open spaces which have been found to assure health and happiness and to increase substantially the value of adjacent properties are considered an indispensable element of any city plan, and in this problem health departments—concerned with the well-being of the population—are always interested.

Healthful living which, with food and shelter are fundamental needs of human existence, has been somewhat neglected in the past. It was in recognition of this fact that the Committee on the Hygiene of Housing of the American Public Health Association, pending the solution of the economic aspect of the problem, formulated fundamental principles with basic requirements and suggested methods of attainment for each principle. A number of these objectives involve city planning problems, which if properly solved will promote public health through the greater use of science and the practice of environmental sanitation in community life. These main objectives refer to vehicular and pedestrian traffic, to the selection of sites and development of land and services of neighborhoods, residential and community facilities, all of which are considered in the light of modern practice. Some of the principles formulated by this committee, which have greatly favored the planning movement, involve adequate space for exercise and play for children, esthetic satisfaction in the home and surroundings, adequate daylight illumination and direct sunlight, and other physiological and psychological needs, as well as protective measures against contagion.

The evolution of land development

and the laws enacted to govern the distribution of the population of old cities tended in certain measure to obviate congestion. In the beginning the central nucleus exercised a power of attraction that caused all the activity of the community to flow toward it, but when the central congestion reached a certain stage this trend decreased and attraction in the opposite direction spread the population to and beyond the outlying parts of the city, and we had uncoordinated growth and incoherent development on the edges of arterial highways and other means of communication.

The application of general planning principles and, to a lesser extent, the advent of satellite towns, garden cities, and rural industrial cities have been conscious efforts toward decentralization and the diffusion of population and have provided a certain check to the continuous, uncontrolled suburban growth of cities, with its "ribboning along the roads, the muddled use of land or the jumble of houses and industry."

It has been observed that the tendency of city planning in recent years is not only toward decentralization, or the abandonment of central areas, but also toward the regeneration of slum areas, and to this end large-scale rebuilding with government help has been effected within city limits.

The growth of great cities depends in a large measure upon the facilities offered for intercommunication by means of well planned transportation systems between their various interdependent sections. A large city is not by itself an independent entity; it forms a vital and integral part of a region and is the center of its communications and public utilities, but it needs the whole surrounding region to develop its trade, industry, and sources of subsistence.

In the matter of traffic, there is close relationship between its movement and the parking problem, and traffic experts are convinced that the provision of off-street parking is more than a passive effort to solve this problem. It is also obvious that the movement of people and goods has a very important bearing on the economy of communities. It is equally clear that prevention of injury and deaths from traffic accidents is an important and promising field of health protection.

To be convinced, one must consult the figures issued by the Statistical Division of the National Safety Council. In the United States in 1951, for instance, motor vehicles were responsible for 1,300,000 persons injured and for 37,300 deaths.

In conclusion, I may say that public authorities have learned how sympathetic the population is to any movement tending toward a comprehensive or coordinated plan, as soon as they realize that sound planning principles are being applied to prevent economic waste, safeguard public health, promote welfare, and finally preserve the elements of beauty and the amenities of life. It is recognized today that all planning activities should be in terms of human use, convenience and happiness of the people, and their protection, either at home, at work or at play.

All these matters show the importance of city or town planning and its relationship with public health. For both, the potentialities for usefulness are becoming greater than ever. The continued interest and participation of public health officers is indispensable in the planning of better cities, in gaining support for, and in aiding the realization of such an ideal.

All three aspects of housing improvement—conservation of good neighborhoods, rehabilitation of properties beginning to deteriorate, and replacement of dilapidated buildings—impose obligations on public health. This paper arises from one health officer's experience. There is a job here for health education, he says.

The Team Approach to a Better Environment*

The Health Department Role

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THE most important factor in an individual's physical environment is the dwelling within which he resides. There is no sphere of local public administration in which effective teamwork is as important as it is in the planning and operation of a comprehensive housing improvement program. Such a program embraces practically every aspect of community life, and its success requires the continuous collaboration of a larger number, and more divergent variety, of community agencies than any other type of local program. An official local health agency can make important contributions to the success of a total community housing improvement program. Its activities must be planned and evaluated as a contribution toward the achievement of that purpose, not as a separate entity.

CHARACTERISTICS OF BLIGHT

Practically all of our older urban communities are confronted with the decay of certain residential neighborhoods. Areas manifesting such decay are usually designated as being blighted. It is impossible to define a blighted area in a brief, concise fashion. The term encompasses the entire process of decay from the presentation of premonitory symptoms through the death throes of an area.

Blight is a social as well as a physical phenomenon. Typical physical characteristics of a blighted area include structural obsolescence, structural deterioration, and little, if any, new building or modernization of existing buildings. There is often an increase in population density due to the subdivision of dwelling units or their conversion to rooming houses. These factors are also usually combined with a shortage of parks and playgrounds and numerous other characteristics of poor neighborhood layout.

The apathy shown by most residents of such areas is a major characteristic of social disorganization. There is a general failure of interest in preventing the continued decline of dwellings, as well as commercial structures. This general attitude of carelessness fre-

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quently extends to those who are responsible for providing a wide variety of public services in these areas. To what extent these social attitudes are causes or results of blight is indeterminable. It seems apparent, however, that to prevent and cure blight we need to deal with both the social and physical phenomena which characterize it.

COMPONENT PARTS OF A BLIGHT ELIMINATION PROGRAM

A total blight elimination program must embrace the following three activities: (1) the protection of those residential neighborhoods which are as yet unblighted or manifest only the incipient signs of blight, a process usually termed neighborhood conservation, (2) the large-scale improvement and modernization of moderately blighted neighborhoods, an activity commonly designated as neighborhood rehabilitation, and (3) the clearance and subsequent rebuilding of the most severely blighted areas, an undertaking known as urban redevelopment.

From a long-range viewpoint, conservation, rehabilitation, and redevelopment activities, if coordinated and maintained in proper balance, will be of equal importance. The three activities need not be and should not be in conflict. With proper planning they can be conducted so as to effectively complement one another. The local health department can and should be playing an important role in the total, unified approach to conservation, rehabilitation, and redevelopment.

ESSENTIALITY OF OBJECTIVE MEASUREMENT

Objective measurement of the scope and nature of the problem is a prerequisite to the formulation of sound plans for the arrest and elimination of residential blight. Unless such measurement is undertaken, it will be impossible to attain the type of teamwork required to demarcate intelligently those areas in which conservation, rehabilitation, and redevelopment are the most desirable and practical solutions to the total problem. In the absence of measurement, which will sensitively distinguish between the different hues and shades of blight, there can be no objective public presentation of plans, and public discussion of such plans cannot be conducted in an intelligent fashion.

An Appraisal Method for Measuring the Quality of Housing,[1] developed by the American Public Health Association's Committee on the Hygiene of Housing, has been found to be a most valuable device for such measurement in a fairly large number of American cities.

The health department, utilizing the personnel of it's bureau or division of environmental sanitation, is the logical public agency to perform the appraisal of dwellings and dwelling units. The official planning agency is the logical one to appraise the environment. Both appraisals are required if the true quality of housing is to be determined.

NEED FOR COLLABORATIVE PLANNING

The development of plans for the treatment of blighted areas is a collaborative job. Many departments of local government are involved in the processes of blight prevention and elimination. All of them should participate in the planning steps. In addition to the official planning agency, typical local governmental agencies, the participation and cooperation of which are required, include those departments dealing with health, building inspection, legal counseling, schools, traffic engineering, parks and playgrounds, public works, redevelopment, public housing, tax enforcement, fiscal matters, and public welfare. Civic, business, labor, and neighborhood leaders should also participate in the various stages of the planning process. When such leaders aid in planning they will usually lend assistance in securing

proper public presentation and discussion of the plans.

As a result of such discussions, new evidence or previously undisclosed public attitudes may be brought out. Consequently, the planning team may see fit to modify the original plans.

IMPORTANCE OF LEGISLATIVE APPROVAL OF PLANS

After the final plans have been formulated, their official acceptance through appropriate local legislative action is a necessary and vital step. Conservation, rehabilitation, and redevelopment districts should be officially designated by the legislative body. The legislation should include safeguards which will insure owners and occupants that dwellings in sections where extensive conservation or rehabilitation activities are indicated, will not subsequently be included in a redevelopment area until a specified minimum number of years has elapsed. The reason underlying the need for such action is expressed in a report of the City of Milwaukee's Urban Redevelopment Committee [2]:

> If owners are to be encouraged and required to improve dwellings in residential rehabilitation areas, it is most important that no change be made in the use of all dwelling structures which now meet, or can be made to meet, and which will continue to meet suitable dwelling standards. Any vacillation in policy which would result in a block being first included within a residential rehabilitation area, and a few years later in a residential redevelopment area, would be disastrous to any sound rehabilitation activity.

If the heads of various local governmental agencies or leaders of civic, labor, business, or neighborhood organizations are in disagreement at the time the legislative body conducts its public hearings on the proposed plans, doubts and misgivings are certain to arise in the minds of legislators. As a result, a generally worth-while plan may never be translated into action because of outright rejection or interminable delay on the part of the legislative body. Collaborative planning is the most certain method of assuring that the legislative gap between plans and operative programs will be successfully hurdled.

ROLE OF THE HEALTH DEPARTMENT IN CONSERVATION

In areas designated as conservation districts, a variety of local agencies will need to play important roles. The chief role, however, will have to be played by the owners and occupants of the buildings. Their interest can probably be best aroused and translated into sustained action through the central neighborhood conservation council—district subcommittee—block-unit type of approach. The health department can contribute to the successful organization and functioning of such citizens' groups by making available to their leaders the services of health educators skilled in the technics of community organization and group dynamics. Obviously, such educators will have to be reasonably familiar with the general nature of such things as the community's zoning code, master plan, and housing code.

Even in areas which are only slightly blighted, there will usually be at least a few dwellings which lack essential facilities, or have fallen into a state of disrepair, or are overcrowded with occupants. Where the citizens of the neighborhood cannot prevail upon the owners or occupants to correct the undesirable conditions voluntarily, an official agency, authorized to exercise appropriate police power, must intervene. Such police power needs to be expressed in the form of a housing code. For a variety of reasons, the health department is the most appropriate local official agency to enforce such a housing code.

A housing code is not a substitute for a grass-roots, citizen-participation program. In conservation districts the

housing code should be used to complement the citizens' activities. Citizen programs can reach beyond the law so that various amenities of desirable housing may be attained.

ROLE OF THE HEALTH DEPARTMENT IN REHABILITATION

In rehabilitation districts the operational problems do not differ basically from those in conservation districts. Some facets of the rehabilitation problem do, however, require a somewhat different or more profound emphasis.

Employment of the neighborhood citizens' type of approach is indicated. Effective citizen organization and action will usually be more difficult to attain than in conservation districts. This is mainly attributable to the fact that a larger percentage of absentee ownership and a greater degree of apathy on the part of both tenants and owner-occupants is characteristic of rehabilitation districts. These districts constitute a real challenge to the public health educator interested in improving the hygiene of housing.

Even with an obligato of reasonably successful citizen activity, heavy overtones of police power application will generally be required. Compared to conservation districts, the dwellings located in rehabilitation districts will tend to be older and more obsolete. The lack of facilities, inadequacy of maintenance, extent of deterioration, and overcrowding with occupants will all be more pronounced. In addition, a significant percentage of the dwellings will be totally unfit for human habitation. These structures must either undergo extensive and costly rehabilitation or be closed to human occupancy.

Practical zoning and planning changes will not usually contribute as much to an improved environment in a rehabilitation area as in a conservation area.

The net effect of all the factors enumerated above will be to make effective housing code enforcement a more difficult task in areas designated for rehabilitation.

ROLE OF THE HEALTH DEPARTMENT IN URBAN REDEVELOPMENT

A district designated for redevelopment, today, is the same one which might have been spared this fate if rehabilitation had been undertaken a generation ago. Failure to do so resulted from lack of vision, apathy, and absence of planning.

The processes of demolition and residential reconstruction, or conversion of the cleared land to commercial, industrial, or other uses, are slow and enormously expensive local undertakings. The responsibility for administering operations of this type is usually delegated to an official redevelopment agency. The planning of redevelopment is, again, a collaborative job and its administration is a complex operation.

It is in the areas designated for redevelopment that the need for improving the hygiene of housing is greatest. Paradoxically, it is here that rigid, undiscerning enforcement of a modern housing code can have disastrous consequences. Many owners of dilapidated dwellings, if confronted with the necessity of complying with all code requirements, would refuse for obvious economic reasons. This would leave the health department with the alternatives of either disregarding enforcement of its orders, or of causing the dwellings to be closed to human habitation.

In the absence of an adequate supply of better housing, at rentals the displaced persons could afford to pay, the latter course would be impractical. On the other hand, some owners would proceed to meet the housing code requirements. When the local government subsequently exercised its power of eminent domain, in order to assemble land for redevelopment purposes, the acquisition cost would include the original value

of the dwellings plus the cost of rehabilitation.

Within districts designated for redevelopment, certain provisions of a modern housing code must be selectively enforced with a fine sense of timing. The formulation of programs for demolition, which include at least 10-year time schedules for anticipated accomplishment, appear to be highly desirable if health departments and redevelopment authorities are to effectively coordinate their activities within redevelopment districts.

HOUSING TOOLS FOR USE BY THE HEALTH DEPARTMENT

The most significant contributions a local health department can make to implement the team approach to better housing are: (1) the appraisal of dwelling units; (2) the enforcement of a housing code; and (3) the organization, education, and motivation to effective action of citizens living in blighted areas.

The American Public Health Association has already made available to the public health administrator two of the basic tools needed by him to fulfill his role as an effective member of the team. They are *An Appraisal Method for Measuring the Quality of Housing* and *A Proposed Housing Ordinance*.[3]

The author hopes the Association will now undertake the development of a guide for educators who may be assigned to operational programs designed to improve the hygiene of housing.

A PROPOSED HOUSING ORDINANCE

A Proposed Housing Ordinance was designed to be a useful guide to persons interested in the development of a comprehensive housing code. It is worthy of detailed study by all public health administrators interested in environmental sanitation. The publication represents the contributions which a team of health officers, public health engineers, building inspection officials, attorneys experienced in administrative law, and others were able to offer after prolonged study.

Most features of the proposed ordinance should remain appropriate for a long period of time because good administrative practices, proper administrative drafting technics, and judicial doctrines are but little affected by the passage of time. It is to be recommended for reading by public health administrators because of the good legal form of its administrative provisions, if for no other reasons. Certain of these legal-administrative concepts could well be employed in the formulation of various other health ordinances. Particularly deserving of close scrutiny are those provisions which relate to the granting of controlled rule-making power to the administrative officer, the service of notices and orders, and the manner in which the recipient of a notice is afforded an opportunity to be heard in an orderly and democratic fashion.

The provisions of the ordinance are, to a considerable degree, modeled along performance lines but no useful housing code can be devised in which all of its provisions are so worded. The appropriateness of each ordinance provision for any particular community can best be determined by measuring it against local needs, conditions, and traditions.

CONCLUSIONS

Teamwork is more important in the planning and operation of a total housing improvement program than in any other sphere of local public administration. Blight is a social as well as a physical phenomenon. Blight elimination programs should be designed to arrest and eliminate both the social disorganization and the physical decay which are characteristic of blighted areas.

Objective measurement of blight is a prerequisite to the development of sound

plans for blight elimination. As a part of a local collaborative planning team, the health department can contribute much to the team's success by performing an appraisal of the quality of dwellings and dwelling units.

The component parts of a comprehensive blight elimination program consist of neighborhood conservation, rehabilitation, and redevelopment. The health department can make important contributions to the successful operation of all three segments of a total program.

Properly indoctrinated health educators can effectively assist in the organization and motivation of citizens, living in conservation and rehabilitation districts, so that their apathy will be dispelled and they will become a positive force in blight elimination. Properly trained sanitation personnel can appropriately enforce an adequate housing code so as to complement the activities of the citizens themselves. *A Proposed Housing Ordinance*, published by the American Public Health Association, can serve as a useful guide to a public health administrator interested in the development of a local housing code.

REFERENCES

1. Committee on the Hygiene of Housing. *An Appraisal Method for Measuring the Quality of Housing*. New York: American Public Health Association, 1945.
2. Milwaukee Redevelopment Coordinating Committee. *Blight Elimination and Urban Redevelopment in Milwaukee*. Milwaukee, Wis.: Municipal Reference Library, 1948.
3. Committee on the Hygiene of Housing. *A Proposed Housing Ordinance*. New York: American Public Health Association, 1952.

Medical Research Fellowships

The Division of Medical Sciences of the National Research Council is accepting applications for postdoctoral research fellowships for 1954–1955. The awards are designed to offer research experience for promising individuals who look forward to careers in research.

Two types of fellowships are awarded by the American Cancer Society on recommendation of the Committee on Growth of the Division of Medical Sciences:

Fellowships in Cancer Research for which citizens of the United States are eligible.

British-American Exchange Fellowships in Cancer Research offered to citizens of the United States for advanced study in Great Britain. Similar fellowships are awarded by the British Empire Cancer Campaign to young British scientists for research in the United States.

The Medical Fellowship Board of the Division of Medical Sciences administers:

Fellowships in the Medical Sciences supported by The Rockefeller Foundation and by The Lilly Research Laboratories, and *Fellowships in Tuberculosis* supported by the National Tuberculosis Association. The Rockefeller Fellowships are open to citizens of the United States and Canada; the Lilly and NTA Fellowships to United States citizens only.

Fellowships in Radiological Research are administered by the division's Committee on Radiology for the James Picker Foundation, which has particular interest in supporting candidates who propose to carry on research in the diagnostic aspects of radiology. Appointments are not limited to United States' citizens.

Applications for 1954–1955 under any of these programs must be postmarked on or before December 10, 1953. Fellowships are awarded in the late winter or early spring. Complete details and application blanks may be obtained from the Fellowship Office, National Research Council, 2101 Constitution Ave., N.W., Washington 25, D. C.

When the people for whom any service is demonstrated take over and carry on the good work, then that demonstration may be put down in the records as a success. Perhaps the same sort of stimulant that is prescribed for our neighbors to the South could be applied with equal benefit in many places here at home.

A Serviço in Action

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IT was in January of 1942 and the world was at war. The ministers of foreign affairs of the American Republics were meeting in Rio de Janeiro to find solutions to their common problems. One of the outcomes, and one of the most important ones, led to the development of what is today known as the "serviço" in Portuguese-speaking Brazil, and "servicio" in the rest of Latin America.

This is a bilateral governmental service within a Latin American ministry, set up by joint agreement between that country and the Government of the United States, represented by the Institute of Inter-American Affairs. Its purpose is to carry out a program of development in a specified field of operations and applies the know-how of United States technicians on a show-how demonstration basis.

But why is this important? Because it has set a new pattern in international cooperation that may yet lead the world to a permanent peace. Nations participating in a successful serviço program would think twice before going to war against each other. The results have been so successful and so much international friendship has been engendered that this type of program has now become a permanent part of United States foreign policy.

SERVIÇO ESPECIAL DE SAÚDE PÚBLICA

Let us look, for example, at the Serviço Especial de Saúde Pública in Brazil (Special Public Health Service) or SESP, as it is affectionately called by the people it serves in Brazil. As part of the Ministry of Education and Health, this highly effective organization employs almost 1,500 Brazilian doctors, nurses, engineers, and other personnel in a wide network of health centers and hospitals. United States participation, as in 17 other Latin American countries, is administered through the Institute of Inter-American Affairs, the Latin American Regional Office for the U. S. Foreign Operations Administration.

About 11 years ago, when this serviço was first created, the United States provided most of the money and technicians, but now 90 per cent of the money and 99 per cent of the personnel come from the Brazilian government. At the present time there are only 15 North American specialists acting as consultants, while Brazilians are in the executive direction of every phase of the

work. This is a measure of the success and maturity of the program.

One of the major reasons for the effectiveness of the serviço is that its personnel are all on a full-time basis, a factor we in the United States are apt to take for granted. In addition, it is free from political pressures, its personnel remain the same even though the government changes, and there is more flexibility in financial matters than is usually the case.

All of these important points are an integral part of the cooperative spirit of the program and it is due to them that this serviço has such a splendid record. The whole philosophy is one of sharing ideas and jointly working out as partners the best methods for solving the problems encountered. The program really reaches the people, and hundreds of thousands of Brazilians in rural areas who were formerly without any public health service have enjoyed its benefits. In addition, it has served as an invaluable training agent, through which hundreds of doctors, engineers, nurses, and other personnel have received modern professional education and experience both in Brazil and in the United States. There is no doubt but that the United States know-how in this field has been accepted and is here to stay.

PROGRAM OF THE RIO DOCE VALLEY

The work of SESP in the Rio Doce Valley is typical of the way a serviço operates. It started early in 1943 with only emergency sanitation projects to protect the health of laborers in camps along the railroad line serving the valley. Remember that this was during the war and the large deposits of iron ore and other strategic materials in the valley were desperately needed by the allied nations.

More than 30 camps of about 50 buildings each had been established and there were many sanitation problems to be solved. Drinking water was apt to be contaminated, sanitary disposal facilities were almost entirely lacking, and malaria was very common. SESP rolled up its sleeves and went to work to solve the problem.

Safe water was supplied from springs or wells, with a manual pump at the source of supply, a temporary covered reservoir, and public faucets easily accessible to everyone in the camp. Temporary individual latrines were built for each house. The Laboratory Division started antiverminosis treatments and subposts were established for the control of malaria. The small towns along the river were not neglected either, the same basic approach being used.

PERMANENT SERVICE

Even during the war it was obvious that if real progress were to be made in improving the health of the residents of the valley, some type of full-time local health service must be developed. For this reason, the three basic parts of a modern public health service—water supply, sewerage system, and health center—were planned for each of the three main towns along the railroad, Colatina, Aimorés, and Governador Valadares.

Each health center is under the direction of a full-time public health officer with a staff of full-time assistants, such as other doctors, nurses, and engineers, as well as auxiliary personnel. The major emphasis at the center is on women and children, with clinics devoted to prenatal cases, infants, preschool and school children. The dental clinic serves these same groups.

Other services include the control of communicable diseases, examination and treatment of adults, and a milk dispensary for infants. The nurses also provide classes and supervision of the midwives, thereby greatly reducing the number of infections and deaths due to unhygienic practices. Auxiliary nurses visit the homes and schools of the com-

munity, teaching, demonstrating, and showing how to prevent illness. They give guidance to the health clubs in the schools and are the chief link between the health center and the community.

The sanitary inspector is responsible for assisting those homes which are not connected with the sewerage system to build and maintain sanitary privies. He also inspects hotels, restaurants, markets, schools, and homes to discover sanitary problems and helps get them solved. In addition, engineering consultation and supervision is provided from the headquarters office of the program.

Today, any one of these towns can serve as a good example of the progress SESP has brought to the valley. Diseases and deaths have been reduced, production has been increased, and the people are happier than ever before. They take pride in their health centers and what has been accomplished.

HOSPITALIZATION

Even though medical treatment was included in the services of the health centers from the very beginning, it soon became apparent that often more complete facilities for taking care of people who were seriously ill would be needed. As word spread that a health center was operating, sick people from farther and farther away would arrive and wait to be treated. Cases of typhoid fever and other diseases needing isolation created a serious problem, and many of the women attending the prenatal clinics needed hospital care at delivery.

Therefore, early in 1949, SESP took over an unfinished hospital building at Colatina, across the street from the health center, finished and equipped it, landscaped the grounds, and opened the doors for patients in September of that year.

The health center and hospital are coordinated under the direction of the chief of the health center so that Colatina has now become a "medical center" and cases are now being received from a huge area, including parts of the neighboring state. More such hospitals are now under construction in various parts of the country. Thus began a new phase of the program.

SERVING THE RURAL AREAS

In order to meet more adequately the needs of the people in the rural areas, smaller supplementary health posts have been established. These units offer approximately 80 per cent general medical care and 20 per cent public health activities. In addition, still smaller subposts are being developed which have a resident nurse, but to which the doctor comes only once a week. Thus health services are being brought closer to the rural people.

Another plan initiated by SESP has been a cooperative arrangement with other governmental agencies, an approach which has tremendous possibilities for more efficiently serving rural residents. This is a truly coordinated project between the fields of agriculture, education, health, and transportation. Ten different governmental agencies on the federal, state, and local levels are cooperating in this pilot demonstration to see if by supplementing each other's efforts in these four basic fields, the people will be better off than when each acts independently.

A local staff composed of members of each agency, including a doctor, nurse, sanitarian, agronomist, home economist, social service worker, and teachers, work as a team to improve all aspects of community life. The project was started in the village of Chonin, but has been moved to another county nearby, called Matozinhos, where the agricultural possibilities are greater.

Essential to the plan is the local community council, composed of representatives of the people concerned, which serves in an advisory and liaison capacity. Self-help rather than dependency

on government "handouts" is stressed, and every effort is being made to secure the participation of the people in improving their own welfare. This project has been operating for two years and, while it was initiated by SESP, it has now been largely taken over by the government agencies of the state in which it operates. This illustrates the constructive catalytic nature characteristic of the serviço programs.

PLANS FOR THE FUTURE

A serviço is not intended as a permanent program to function forever in a routine manner. Once it has demonstrated the value of a project and there is a well trained group of technicians functioning in a stable service with a budget adequate to insure the efficient continuation of the work, the project is turned over to that service. The serviço then goes on to another area of another activity.

SESP has already turned over a number of water purification plants to the county governments after training operators to run them. So it will be with larger projects. When state health departments are ready and willing to assume the operation of SESP's health centers on a permanent basis with the same high standards that SESP maintains, they will be turned over to that state. SESP will thus be free to turn its attention to the demonstration of other essential aspects of public health work.

This, then, is a resumé of the work done in one valley by a serviço set up originally during the war to protect the health of workers in strategic areas. The results were so beneficial that it was later expanded during peacetime to bring modern public health medical care and hospitalization to both urban and rural residents. It is now training local technicians to eventually take over the work. The serviço technic will very probably go down in history as one of the most useful devices developed between the United States and friendly nations.

Employ the Handicapped Week

As a means of focusing on the employment of handicapped persons both to increase the nation's productive capacity and to give the handicapped person a place in a steady national economy, National Employ the Physically Handicapped has now been observed for eight years. The ninth annual observance, by Presidential proclamation, will be observed October 4–10. The President's Committee on Employment of the Handicapped, organized in the U. S. Department of Labor, is providing material useful in preparing articles, speeches, and other materials in support of fuller employment of the handicapped. It is engaged particularly in "an educational program that will develop in the minds of employers a rationale for the employment of physically handicapped people, including older workers with disabilities." Ross T. McIntire, (MC) USN Retd., is chairman, Washington, D. C.

Just one more clear example of how much is to be gained by institutional staff members and home visitors knowing each other and the contributions that each can make to a common cause.

Educational Program for Nursing Supervisors in Maternity Hospitals*

The Physician's Standpoint

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IN the spring of 1949 the Michigan Department of Health conducted a workshop for hospital and public health nurses to improve further the care of mothers and newborn infants. So great was the enthusiasm of the 50 hospital nurses and 50 public health nurses who attended the conference that some of those from Detroit decided they should get together periodically to discuss common problems and to be otherwise helpful to each other.

Four hospital and two public health nursing supervisors (one from the Detroit Department of Health and one from the Detroit Visiting Nurse Association) met in June of the same year, deciding to promote monthly meetings for "maternity and newborn" supervisors. Three objectives were outlined: to find out what type of interrelationship could exist to promote the ideal type of maternity care; to find out the type of maternity care being given by each hospital; and to learn how to use all community resources in Detroit to promote better maternity care.

The Detroit Department of Health has had, since January, 1949, a supervising public health nurse specially prepared in maternity and newborn service assigned to work with hospitals, primarily to stimulate interest in better care of premature infants. This nurse had attended the state workshop and also participated in the first local meeting and in the organization of the group. In her regular visits to hospitals she successfully stimulated nursing and non-nursing personnel, who work with mothers and babies, to attend the planned monthly meetings. These conferences are held at the various hospitals and health agencies; they are informal, though they have a planned agenda. They have an average attendance of about 30 with representation from the state, county, and local health departments, the Detroit Visiting Nurse Association and the Wayne University Col-

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lege of Nursing. Hospital personnel getting to know the public health workers and, conversely, public health people getting to know hospital staff members has proved most advantageous and makes for better relationships—all of which is in the interest of better maternal and infant care.

From the public health point of view, we feel the discussion of mutual problems and interests has been worth while, and statistical information which the health department can supply has proved of interest to the hospital group. It gives an over-all view of maternal and infant health in their community and tends toward a better understanding of where the emphasis needs to be placed.

The several divisions of a health department can contribute to such meetings. The medical director of the Maternal and Child Health Division of the Detroit Department of Health was invited to attend one meeting to discuss maternity hospital rules and regulations and the maternal and child health program. Another meeting was devoted to a discussion of venereal disease by the public health nursing consultant of the Health Department. Laws relating to blood tests were reviewed, as were those that had to do with reporting of syphilis, gonorrhea, and ophthalmia neonatorum. The fact that a patient with positive serology was not necessarily infectious was emphasized. Further, there was discussion regarding the use of penicillin in the treatment of obstetrical patients who have syphilis. The importance of taking smears of any discharge in the eyes was stressed and also the need for medical follow-up of babies born of syphilitic mothers.

Even though the supervisors' meetings have been well attended, there are always a few who are absent, often due to shortage of nursing personnel. Those unable to attend have been interested to learn about the important topics discussed and the public health supervisor has been able to carry information from the monthly meetings to those who were absent. This service has helped to maintain the interest of the nursing group and to provide more uniformity in the service given. Briefly, a few of the important items discussed have dealt with technics, type and method of formula sterilization, type of incubators—especially as to their operation—hand-washing facilities, general cleaning of nursery space, etc. As a result of this information, given to the maternal and newborn staff, greater interest has been maintained in the care of the newborn.

Early in this program the Department of Health supervisor provided copies of the *American Academy of Pediatrics Standards and Recommendations for Hospital Care of Newborn Infants—Full-Term and Premature*—to hospitals that had not received this material. This publication and other references regarding nursery care of the newborn have been of particular value to both professional and nonprofessional personnel.

Prevention of premature births and care of the premature infant in the first critical days of life are of major concern to public health workers everywhere. While prevention has long been regarded as being in the province of public health, nursing supervisors in hospitals, largely because of these meetings, have worked toward, and in several instances succeeded in, establishing classes for expectant parents in their own hospitals. In addition to these, postpartum classes have been started in several hospitals. This we believe to be commendatory.

Discussions by the group of approved methods for providing heat while the baby is still in the delivery room, the need for the prevention of infection, correct feeding, and the maintenance of heat upon removal to the nursery have proved decidedly beneficial. The avail-

ability of the city's ambulance for transporting premature infants to hospitals equipped to give premature care has been stressed. Hospital supervisors have been encouraged to make use of the services of public health nurses for visiting homes of premature infants, both before and after dismissal from the hospital, to make sure these homes are satisfactory, are free from any communicable or infectious disease, and to assist the mother in the care of her premature infant. This has received the close cooperation and full approval of physicians. With the help of the public health representatives, both state and local, the hospital nursing personnel have become familiar with the state rules and regulations for hospitals with maternity departments and have been able in many instances to adjust to these regulations or to acquaint their directors with changes needed for compliance.

The public health and visiting nurses also gain from these informal meetings, in that they are able to take back to their own group what is new in hospital, medical, and nursing procedures. By public health nurses keeping informed of the newer hospital methods, they are able, in turn, in their home visiting, to support the hospital staff. An example of this is the elimination of cord dressings and umbilical bands and in the newer technics of perineal care—"drastic changes" for some mothers who have had other babies when older methods were used. It is of further importance that public health people become more clearly aware of hospital problems, such as shortage of personnel and the contribution made by the nonprofessional worker in the care of mothers and infants.

CONCLUSION

New procedures are replacing old ones with the full approval of physicians, hospital administrators, and staffs. Cooperation by all groups involved is resulting in better prepared personnel and improved hospital facilities—all of which makes for better care of mothers and infants.

All professional people are proud of the high standards of medical and nursing care which we are endeavoring to give. We aim to maintain these standards and whenever possible to improve them.

Medical Draft Extended Two Years

President Eisenhower at the end of June signed the new physician-dentist Act extending for two years the federal government's authority to draft professional health manpower for active duty with the armed forces. The new law continues the $100 a month extra salary allowance for medical and dental officers who volunteer.

Physicians and dentists with 21 months of prior active service are exempt from further service. Those who have less than 9 months of active service since September, 1940, may be required to serve 24 months; those with between 9 and 12 months prior service, 21 months; between 12 and 15 months, 18 months; and those with more than 15 months prior service need serve only 15 months.

Here the testimony comes, convincingly enough, from the other beneficiary of the mutually advantageous collaboration described in the preceding paper.

Educational Program for Nursing Supervisors in Maternity Hospitals*

The Nurse's Standpoint

IRENE NELSON, R.N.

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THE maternity nurses of metropolitan Detroit meet once a month from September through June, and we feel these meetings have helped to improve the maternity care given to mothers in our city. For the past two years—with an increased membership—the group has become a special interest feature of the Detroit District Nurses Association which sends out the notices of the meetings. These cards are sent to the nurses in charge of the obstetrical departments of all the hospitals in metropolitan Detroit, the Nursing Division of the Detroit Department of Health, the Visiting Nurse Association, and the State Hospital Nursing Consultant for our area. Although the notices are sent to the nurses in charge of the departments, they are encouraged to bring some of their nurses, student nurses, or anyone interested in obstetrics with them. The attendance at these meetings has been good, and it is amazing how many nurses come on their day off duty. The meetings start at 2:30 in the afternoon with a short social period.

Perhaps the most outstanding benefit derived from these meetings is the friendship that has developed among the nurses in our community who are interested in maternity care. The nurses in the hospitals realize that we all have similar problems and as a group we can help each other solve these problems. Of course, we are proud of the changes we are able to make, each in her own hospital—whether these changes mean that the mother can handle and care for her baby more while she is in the hospital, or that it is a change in a procedure. We are just as interested in the changes that nurses have made in other hospitals. At these meetings we give each other the encouragement and help which we need. The nurse in obstetrics in one hospital feels free to contact the nurse in another hospital for help. She may call regarding a certain problem or because she would like to attend or have her students be present at one of the parent classes.

The public health nurses who go to these meetings are now our friends, and

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we call them when questions or problems arise. I am sure that we had as many questions and problems in the past, but we hesitated, not knowing whom to call upon in the public health agency. These meetings are held in different public health centers and hospitals in the city. Tours are arranged so that nurses have a chance to see and learn about the public health facilities and the various hospitals. In the past, many of the institutional nurses knew very little about the program and work done by the public health nurses. We were so concerned with our own work and the problems in our particular hospital that our over-all view of maternity care was somewhat limited. With a better knowledge and understanding of the programs and facilities of the public health agencies we are able to help each other build up a referral plan that will better meet the needs of our community.

At these meetings we have a chance to explain to the public health nurses changes in the trends and technics of the hospitals. One of our visiting nurses said, "When an expectant mother states she is going to a particular hospital to have her baby, I can tell her that I know some of the nurses there and know about the hospital." The public health nurses learn what instruction is given to the mothers in the hospitals regarding the care of herself and her newborn baby. Before the maternity nurses started their meetings, the mothers were told in some of the hospitals that the baby did not need an abdominal binder. Many of these same mothers were told by the public health nurses that the binder was necessary. A similar problem arose over terminal sterilization. We can only decrease a mother's fears and anxieties and make our teaching effective when we teach the same things.

At most of our meetings we divide the group into a number of small gatherings of about five or six nurses with a secretary selected by each group. In the small groups each nurse has an opportunity to relate what was done in her hospital or agency. Later the secretaries report to the whole group and the procedures or ideas are questioned or discussed. In order to keep the groups discussing the same points, the program committee prepares brief outlines which we give to everyone at the beginning of each meeting. These outlines over a period of three years have covered the care and instruction of a mother during the antepartum period, labor, delivery, the care following delivery, the nursery arrangement, and the care of the newborn baby. We have studied the different procedures in order to make them simple but safe. We have found that in many hospitals the care of mothers' breasts and nipples was a very complicated procedure, but at the present time most of the hospitals use just a clean wash cloth and soap and water. Simplified technic for perineal care was discussed and many nurses brought their written procedures to the meetings. In this way we learned how the technic was carried out in each hospital. In many of the hospitals it was difficult for the nurses to change procedures. We were told that this is the way the hospital had done it for years past, but our discussions gave these nurses moral support so that they could go back and report to the chief of staff, director of nurses, and the nursing staff the opinion of the maternity nurses and give the names of the hospitals which had made this particular change. We studied the records kept in the labor rooms, delivery rooms, the charting done on the postpartum floors, and in the nurseries. We brought samples of our charts to the meeting and were able to select the good points from these records. We believe that in this way the nursing care of mothers in the different hospitals has improved. This is especially true of the small hospitals in our community.

In the past, the *Rules and Regulations for Hospitals with Maternity Departments,* published by the State Health Department, was sent to each hospital, but frequently the booklet did not reach the nurse in charge of the department. This year the booklet is scheduled for revision, and the State Health Department is interested in the suggestions and opinions from our group. In the discussion of the care of a newborn infant, we referred to the *Recommendations for Hospital Nurseries* by the Michigan Department of Health and the *Standards and Recommendations for Hospital Care of Newborn Infants* by the American Academy of Pediatrics, Committee on Fetus and Newborn. At our meetings we helped each other find ways to carry out the points recommended. For instance, we have eliminated the use of masks in the normal newborn nurseries and premature nurseries.

These meetings keep all the nurses informed of the new trends in maternity care. Ann Keener, assistant professor of the College of Nursing at Wayne University, conducted a large meeting on "Natural Childbirth." She told us about her experiences at the Maternity Center in New York City, and the desire of mothers for meetings or conferences on how their bodies function. Both the hospital and public health nurses need to keep informed if they are to give the mother the support she needs during labor. Some mothers want physical preparation for labor, and Miss Keener had one of her students demonstrate the exercises taught to mothers. All the nurses had an opportunity to hear the reports given by the nurses who attended the Fourth and Fifth American Congresses on Obstetrics and Gynecology. A public health nurse from our city attended a two-week workshop on the teaching of parents, and her report was as helpful to us in hospitals as it was to the public health nurses. New and important articles are brought to the attention of the entire group. We wrote for reprints of particular articles in order that the nurses in small hospitals would have the information. Inspector Thomas Dwyer, detective inspector for the Detroit Police Department, demonstrated the importance of proper identification for the newborn. As a result of our meetings we have improved and unified the methods of identification. The State Hospital Nursing Consultant has kept us informed of the material and help available from that department.

There is much more to be done before every mother has the kind of maternity care we would like her to have. We feel that this goal will be achieved when we have mothers and fathers who are prepared, and doctors, public health nurses and institutional nurses working together as a team. In metropolitan Detroit, we feel the maternity nurses' group has helped us work together, because it has developed a friendship and an understanding of the work, facilities, and problems of each group.

Reported here are the practical ideas of a hospital administrator, two directors of hospital records sections, and a city health department biostatistician upon ways to make institutional and community vital statistics useful to both. This seems to explore a new field.

Role of the Medical Record Librarian in Public Health Statistics*

Summary of Panel Discussion

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THE panel participants,† representing the fields of public health statistics, hospital administration, and medical records, confined their attention to the work of medical record librarians and the need for liaison and communication between hospitals and health departments. It was noted that public health statistics are not the exclusive province of health departments, but also the concern of hospital associations, medical societies, voluntary health agencies, and schools of medicine and public health. In reviewing health department-hospital relationships, it was repeatedly brought out that health departments (and their statisticians) should assume some responsibility for coordinating their requests (other than reports required by statute) with those of other organizations interested in data from hospitals in order to ease the burden placed on hospital administrators and record librarians.

The forces now tying hospitals and health departments closer together were recognized. Each year, the proportion of births and deaths occurring in hospitals continues to grow in all sections of the country, meaning that hospitals are the source of an increasing proportion of birth and death certificates filed with bureaus of vital statistics. Health departments, now concerned with programs for control of chronic diseases, need data on morbidity and hospital care available from hospital records. With the breaking down of the distinction between preventive and curative medicine, hospital data will take on even more importance for health departments.

One significant distinction differentiates the health department's approach to hospital data from that of the institution. Individual hospitals are able to analyze their own material with respect to internal administration and operation. What they are not equipped to do is to relate it to a population base, such as a hospital service area. The resources of the health department make it in many areas the logical agency to do this type of work, although it may also be done by hospital associations and some voluntary agencies. The requirement that data be linked to people in the community and other events taking place there, means that most of the information supplied by hospitals to health departments is best provided in the form of individual case reports. When given in the way of summary tabulations, the

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analytical possibilities are considerably narrowed.

From the viewpoint of the public health statistician the relationship between hospitals and health departments can be characterized as a partnership in the collection and analysis of information considered to be of current significance. The data routinely flowing out of hospitals embrace such diverse items as death and fetal-death certificates, birth certificates (including medical supplements), communicable disease case reports, notifications of other reportable conditions to cancer and crippled children registers, etc. Material sometimes collected for special studies or sampled occasionally includes statements of autopsy results, detailed case histories on maternal, fetal, and neonatal deaths for medical society committees. Hospital discharge data may be collated with information from other sources for use in estimating the prevalence of certain morbid conditions (for example, the cancer morbidity studies conducted by the U. S. Public Health Service). Obviously, health departments are vitally interested in having hospitals maintain high standards in completeness of reporting and accuracy of data supplied.

This is not an academic problem. Studies made in several places, comparing medical certifications of death and birth certificate medical supplements with the hospital records, have often revealed serious deficiencies in the data reported to bureaus of vital statistics. A study of the record-keeping procedures for completing medical supplements in Baltimore hospitals illustrated clearly the basic cause of the trouble. There, it was found that a combination of one to four different types of personnel: obstetrical secretary, obstetrical nurse, obstetrical resident, and attending physician, performed this job. None of these persons had a primary interest in record keeping. Furthermore, the turnover in nurses and residents and the haste of the physician all contributed to an unstable pattern of medical record keeping, which defeated efforts to produce complete records of certain medical items on the birth certificate supplement.

How can the goals of completeness and accuracy in reporting to outside agencies best be achieved? Within the hospital, the role of the medical record librarian now covers the coordination of medical records. She has a knowledge of hospital organization, record management systems, medical classification systems, and maintains liaison on record problems between the medical staff and administrator. At present, she also compiles much of the statistical data on internal hospital operations (admission and discharge data, etc.), and now supervises or prepares many reports for outside organizations, such as those to insurance companies and group hospitalization plans. When records are subpoenaed for legal proceedings, the record librarian often has the responsibility for assembling the documents needed to comply with the order. It would be a logical extension of her present duties to serve, also, as the clearing center within the hospital for the submission of all reports based on medical records to outside agencies, including the health department. In this connection one of her prime functions would be the editing and spot-checking of reports for accuracy and consistency and to maintain their quality by methods analogous to inspection procedures now used in industry. (This was a point repeatedly stressed.) In summary, the librarian should be able to establish controls on the receipt of all requests for information, follow up on their disposition in compliance with hospital practice and decision of hospital authority, and especially to check on the quality of information furnished.

If the principle of review and clearance of reports by the medical record librarian were generally accepted and thoroughly applied by hospitals, many

benefits would accrue to health departments. For example, medical certifications of death could be reviewed for consistency with hospital records and to see that the sequence of causes of death is a plausible one and fits within the framework of the *Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death.* Autopsy data and other medical findings not available at time of certification could be transmitted to bureaus of vital statistics, when such information affected the cause-of-death classification. The librarian could bring internal hospital requests for changes in medical certification to the attention of the certifying physician. Hospital records could also be checked to see that health departments had received all notifications of reportable diseases.

Discussion brought forth the following suggestions:

1. Closer cooperation between public health statisticians and medical record librarians is indicated, both in liaison between professional organizations and among individuals in local communities. Committees should be appointed by the respective national organizations for exploration of their joint problems.* Workshops and training institutes for medical record librarians in the uses and importance of public health statistics should be sponsored by local health departments, hospitals, and chapters of record librarians. Health department statisticians should get out from behind their desks and visit hospitals more frequently. In this connection it was noted that the statistician surveying reporting practices in Baltimore hospitals received the wholehearted cooperation of hospital officials who showed great interest in his visit.

2. State health departments might find it profitable to employ medical record librarians as consultants, to assist local health departments and hospitals with their record problems.

3. In the reporting of births and deaths occurring in hospitals, bureaus of vital statistics would secure better results if, by common consent, requests for additional information could be routed through the record librarian, rather than sent directly to the physician.

4. Medical record librarians should take the lead in educating the medical staff on the importance of reports submitted to outside agencies (including health departments) by means of orientation lectures to residents and interns, participation in medical record meetings, and informal instruction.

5. Public health statisticians should investigate the diversity in reports required by health departments from hospitals in different states. General acceptance of uniform standards on reporting requirements would bolster the rationale for the system and provide a stimulus for better reporting on the part of hospitals.

6. Health departments should take the lead in getting together with other agencies using hospital data to eliminate duplications in requests, to agree on standard nomenclature and definition of terms, and to give advance notice on changes in their requirements. Reports no longer productive should be discontinued.

7. Health departments should supply hospitals with tabulations and lists of births and deaths occurring on their premises of interest to them. Making the transmission of information a two-way exchange would stimulate hospitals to improve reporting practices.

8. The academic training in statistics received by medical record librarians is rather sketchy. Long-range benefits might accrue to health departments and contribute to better hospital administration if, where favorable circumstances prevail, inservice training in elementary statistical principles could be arranged for record librarians.

* The Statistics Section approved on October 22, 1952, the formation of a Section Committee on Cooperation with Medical Record Librarians.

The point made here is that drug addiction is a legitimate concern of public health, for it is a communicable disease amenable to control measures based upon sound epidemiologic principles.

Investigating Narcotic Addiction in School Children*

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HISTORICAL

NARCOTIC addiction was not originally included in the School Health Service Program in New York City for the 1950–1951 school year. However, with the opening of schools in September, 1950, the School Health Service was soon forced to wage a totally unprepared for, but full-scale, war against the problem of teen-age narcotic usage in the school population. In the fall of 1950 reports of narcotic usage in the school-age group were received with increasing frequency. The problem became critical and immediate action was urgently needed.

While adolescent addiction is not a new phenomenon (it is estimated that approximately 30 per cent of all adult addicts begin the road to addiction before their twentieth year [1]), no authentic reports of narcotic usage in the New York City school population were available prior to the summer of 1950. The school medical personnel knew very little about the narcotic problem, the signs, symptoms, its management, or available facilities for treatment and community resources. As a matter of fact, there were no separate facilities for the care, treatment, and rehabilitation of the adolescent user.

Referrals of suspected users were made directly by the school personnel to the Police Department. Over 75 per cent of such direct referrals were found upon investigation to be "false alarms." This overdiagnosis was due to the alertness of the school personnel who were anxious to discover all possible users or addicts. Overdiagnosis increased after a brochure, *Use of Narcotics by Children and Young Adults*,[2] was distributed to the entire school personnel. It was aimed at aiding teachers in detecting possible narcotic users and it listed some of the more common signs and symptoms of drug addiction, as: "furtive glances, watery eyes, drowsiness, marked restlessness and body movement, fast walking, frequent yawning, etc." While it correctly stated that these symptoms are not peculiar to drug addiction—as most of them may be due to other causes—it admonished that "at this particular time it is necessary to consider the possibility that any of these symptoms may be due to some form of narcotic or other drug that a child is taking."

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The overdiagnosis caused great loss of manpower, but more important, much needless stigmatization of innocent victims. It may be well to cite here one of many typical case reports.

W. W.—15 years old—was referred by the Bureau of Attendance as a possible user of drugs. The home was visited by an attendance officer and the mother who was interviewed was very intelligent and cooperative and emphatically stated that the boy did not use drugs. On interviewing the boy, he claimed that he "was in school and laid his head on the desk because he arose early to do a moderate amount of homework and had listened to the radio a lot the previous night." A physical examination by a school physician revealed a well nourished boy, pupils equal and reacting to light and accommodation, nose and throat negative, teeth in good repair, heart and lungs normal, blood pressure 118/68, knee jerks equal and normal, no tremors or weaknesses in the hands or arms, no hernia, no needle puncture marks on arms, legs or body. No instruments or suspicious cigarettes or packages were ever found on the boy. In view of the history and physical findings in this case, it was clear that the boy was not a drug addict or user.

Upon recommendation of the School Health Service the brochure was withdrawn from the schools and the direct referral system to the police suspended. The following screening procedure was established: students suspected of narcotic usage were to be referred to the School Health Service for an appraisal. The school physician would interview the suspect, take a careful history, and perform a complete medical examination and then determine whether or not the student was a narcotic user. If found to be a user, or if further investigation was deemed advisable, the student was referred for the necessary treatment to one of two hospitals nearest to his residence. The Police Department was notified after the student was referred for treatment and verified as a case of drug usage. Many innocent suspects were thus spared the inconvenience and needless emotional trauma of being investigated by the Police Department.

FUNCTIONS AND OBJECTIVES OF SCHOOL HEALTH SERVICE

Staff Training—Narcotic addiction was an epidemic never before encountered by the school physician. Since he was to be the key person in case finding, referral, and follow-up, it was necessary to provide him with a better orientation relating to the drug addiction problem. Hence, an intensive indoctrination course was given to the entire school medical personnel by specialists in the field. Though direct referrals were no longer made by the education staff, the teachers also needed some orientation since they were the initial screeners and possible case finders. Therefore, teachers were also given a series of indoctrination lectures concerning the habitual use of drugs, and a teaching unit for the use of educators on the nature and effects of narcotics was devised. The orientation course was exceedingly valuable, for it was realistic and established a sound point of view, and especially was it devoid of sensationalism and overdramatization which were rampant at that time.

Referral for Treatment—In cooperation with the Department of Hospitals, two facilities were made available in existing institutions for the acute detoxication of adolescent drug users. A timesaving, simple procedure was also devised whereby a narcotic user could be admitted promptly to a treatment facility on the telephonic advice of a school physician. Parental consent was obtained in all cases.

An epidemic of narcotic addiction must be studied in the same manner as any other outbreak of a communicable disease. The agent host and environ-

TABLE 1

Narcotic Users Among School Children by Type of School (As Reported by School Physicians), New York City, September, 1950–February, 1952

Type of School	Narcotics Users	Population	Rate per 10,000
Elementary Public	49	655,893	0.75
Elementary Parochial	1	229,251	0.04
Academic High School	37	162,267	2.28
Vocational High School	80	45,096	17.74
Total	167	1,092,507	1.53

ment and their impact and interrelationship must be studied and investigated. In an epidemic of narcotic addiction the *agent* is perhaps of far lesser significance than the ***host and environment***. It should be emphasized that drug addiction is not a primary disease entity, but merely symptomatic of an underlying deep seated disturbance: narcotic addiction being only one of many forms of social maladjustment. Narcotic users are not definitely psychopathic, but in the main, products of an unhealthy and an unhappy environment. Therefore, the underlying causes and motivations must be investigated, discovered, and understood. It is not the *process of addiction* which is important to know, but what causes an adolescent to use a drug or to become socially maladjusted.

It is known that accidental addiction is exceedingly rare, probably less than 5 per cent, for not all who are exposed to a narcotic drug become addicted. Normal, well adjusted persons may use a drug for a long period of time without becoming addicted. Two factors are needed for the production of addiction: there must be a vulnerable soil—the individual or host must suffer from a psychological or an emotional disturbance—and the drug or agent must be capable of resolving the conflicts, tensions, and anxieties of the maladjusted individual.

A potential addict, upon administering a drug, claims to experience a feeling of well-being, for the characteristic response of an addict to the drug is one of becoming "normalized." His conflicts, tensions, and anxieties resolve and he experiences a sense of "euphoria." The "normal" adolescent, on the other hand, who may occasionally use a drug for the purposes of group identification, or on a dare, does not experience a feeling of "euphoria" from it and soon gives up the use of drugs without any ill-effects. The nonaddict user once having stopped the drug does not relapse for he does not have any craving for it. Relapses are very common, however, among true addicts for they have a physical and psychological dependence on it. To prevent relapses addicts must be given a substitute for the drug to resolve their tensions—greater security, psychotherapy, emotional guidance, and counseling.

EPIDEMIOLOGICAL DATA

There were 167 verified users of narcotics who were referred by school physicians in New York City for treatment between September, 1950 and February, 1952 (Table 1). The rate among vocational high school students was 17.74 per 10,000 of the school population as compared with a corresponding rate of 2.28 in academic high schools and an over-all school population rate of 1.53. The high incidence in vocational high schools may be explained by the fact that vocational high schools include a larger number of underprivileged students in a lower income group than the academic high schools. The average I.Q. is lower, the number of "drop-outs" higher, and emotional disturbances are more frequently seen than in students in the academic high schools.

TABLE 2

Narcotic Users Among School Children by Age and Sex (As Reported by School Physicians), New York City, September, 1950–February, 1952

Age in Years	Total	Male	Female
Under 14	10	9	1
14	12	12	0
15	45	35	10
16	50	47	3
17	28	25	3
18	15	14	1
19 and over	7	6	1
	167	148	19

Of the total number, 148 (89 per cent) were males and 19 (11 per cent) were females (Table 2). The sex difference could perhaps be explained by the fact that the female is more mature socially and emotionally at this age. The highest incidence was at age 16. Only 10 were under 14 years, and 7 of the entire group were in the 19 years-and-over category. The small number at this age level may be more apparent than real since at 19 years of age attendance at school is not compulsory (Table 2 and Figure 1).

Though narcotic addiction is not limited to any particular racial, ethnic, or socioeconomic group—indeed every race, creed, and area were represented—most of the cases were concentrated in critical residential areas inhabited by individuals or groups subjected to many deprivations and discriminations. In addition, many were subjected to early emotional trauma, strains and stresses, and came from broken and disharmonious homes.

Out of a total of 751 schools, three schools in critical areas accounted for 54 per cent of all reported cases, and one vocational school was responsible for over 25 per cent of all cases (Figure 2). The epidemic reached its peak in May, 1951, and gradually diminished until the end of the school year (Figure 3). The incidence again rose during the first two months of the 1951–1952 school year (October–November), then sharply declined to almost negligible proportions.

The 167 adolescent drug users were

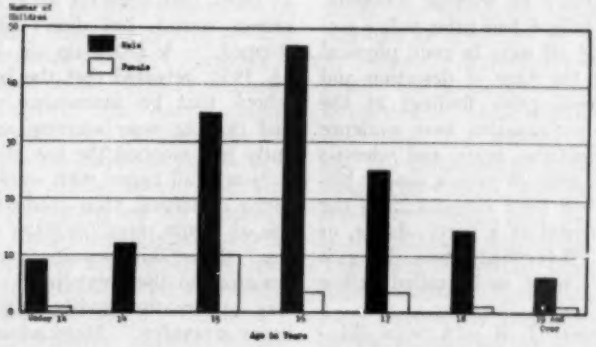

FIGURE 1—Narcotics users among school children (as reported by school physicians). New York City, September, 1950–February, 1952.

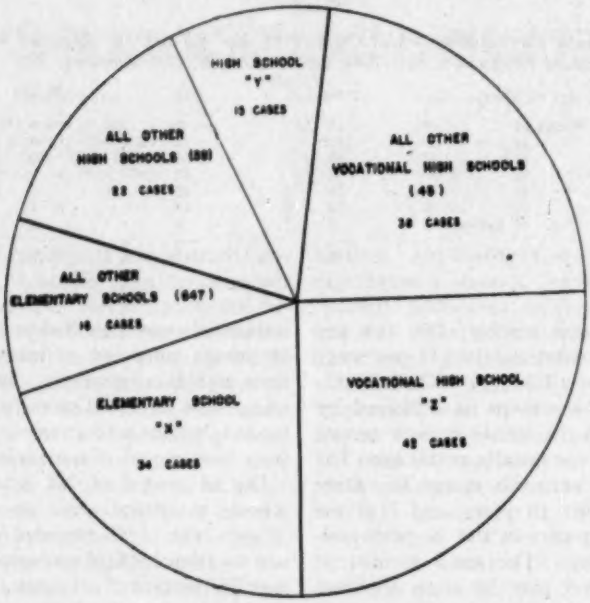

FIGURE 2—Narcotics users among school children by type of school. New York City, September, 1950–February, 1952.

in the main not particularly different from their classmates. They were not visibly psychopathic or neurotic and most of them had not been delinquent prior to their usage of narcotic drugs. They maintained an average scholastic record, and only 8 had prior police records. Nearly all were in good physical condition at the time of detection and the only presumptive findings at the time of the examination were evidence of needle punctures, scars, and sclerosis of veins. Nearly all gave a similar history: they had been introduced to the drug by a friend at a party, dance, or in school. "Everybody was doing it and I didn't want to be called yellow or chicken."

Case Report—J. B.—15 years old—related: "Was introduced to narcotics by a friend in the summer of 1950. Smoked marijuana five or six times. Then I "sniffed" heroin (nasal route) two to three times weekly. In October, 1950, went to "skin popping" (subcutaneous injections). Did this about 15 times, then tried the mainline (intravenous route), but didn't like it and stopped." A follow-up on November 15, 1951, revealed that the boy was in school, that his attendance was good, and that he was behaving and apparently had stopped the use of narcotics.

Nearly all began with smoking marijuana cigarettes, then graduated to the use of heroin, first "sniffing" or "snorting," then "skin popping," and finally resorting to the "mainline." The drug was apparently readily available but "very expensive." Many admitted stealing and committing other amoral acts in order to obtain sufficient funds to obtain

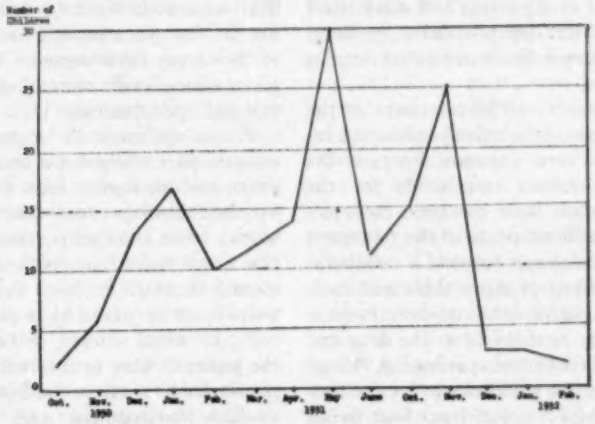

FIGURE 3—Narcotics users among school children by month reported by school physicians. New York City, October, 1950–February, 1952.

the drug. Twenty-one of the 167 were arrested (following initiation to drug usage) for possession of drugs, "pushing," etc., though previously they had had no police records. The average duration of narcotic usage was six months, with a wide range of variations. The average dose was 4 capsules per day, ranging from one to 15—the cost per capsule averaging $1. All users knew how and where to obtain the drug, but were woefully ignorant of the ill-effects of addiction.

There are no positive pathognomonic signs of early addiction and no reliable, simple chemical tests. A diagnosis is usually based on the patient's admission and presumptive signs, such as needle punctures, scars, etc. The use of the narcotic argot or the finding of the "works," eye dropper, needle, spoon, and little cones, are suggestive, but not conclusive evidence. Pin-point pupils may at times be noted, but this is not a reliable sign.[3] When usage is continued for a prolonged period and a tolerance for the drug is established, dramatic changes in personality, attitudes, and behavior take place: the user has only one primary interest, that of obtaining the drug. There is a consequent falling-off in attendance and in scholastic attainment. There is also a withdrawal from previous social activities and a marked anorexia and a concomitant loss of weight follows. To produce the desired effect, the drug must be taken in ever larger doses and at more frequent intervals. If physical dependence occurs, the abstinence syndrome (a positive sign of addiction) will develop upon withdrawal of the drug.

The 167 adolescent drug users referred for treatment remained at the hospital for a period of from 10 days to 6 weeks. According to the Bellevue study,[4] the acute detoxication was relatively simple. None required any opium derivatives for withdrawal symptoms and the abstinence syndrome was very mild. Only 20 per cent had moderately severe symptoms, such as restlessness, lacrimination, perspiration, anorexia. These were relieved by small amounts of sodium amytal. Those with mild symptoms received *no* medication. It may be postulated from the above that most of the adolescents were not actually "addicted," but were users of the drug.

While most of the group had established a psychological dependence on the drug, a physical dependence was not present in these cases.

Rehabilitation—The treatment of the medical phase is relatively easy, but relapses are very common because the underlying causes responsible for the drug addiction have not been obviated. The most difficult phase of the treatment is psychosocial and requires a collaborative team effort of many skills and disciplines. Relapses are common because of the ready availability of the drug and because of continued craving. A "drug-free, protected environment" in a residential school-hospital from four to six months must be provided to prevent relapses. During this period the drug user must be retrained, reoriented, and rehabilitated before he can safely be returned to his former environment. (Such a facility for the nondelinquent adolescent user of narcotics, recently was opened in New York City—the Riverside Hospital at North Brothers Island in The Bronx.)

A residential school-hospital must include facilities for the total treatment of the patient, for not only the addiction, but the patient must be treated. It is exceedingly important to induce the patient to become an active participant in the treatment program. Total treatment includes many services and must be given by experts representing many fields, including physicians, nurses, psychiatrists, teachers, vocational guidance counsellors, social workers, occupational therapists, and spiritual leaders.

It is important to maintain and improve the patient's morale, make him fully aware of his problems, and to inculcate in him a desire for rehabilitation. There must be a better channeling of communication and an exchange of ideas between patient and health team. The future needs of each patient must be anticipated and given due consideration. The adolescent must be fully prepared for the day when he will have to return to his former environment. He must be given educational, recreational, and vocational opportunities.

Follow-up must be included as an integral part of the total treatment program, and one agency must be resposible for the follow-up care. The responsible agency must know all pertinent information about the family, patient, and community in which he lives. Periodic home visits must be made by a public health nurse or social worker, or both; during the patient's stay in the residential hospital-school to assess the home and immediate environment and to prepare parents and the family for the patient's return and his complete acceptance. Indeed, a visit should also be made to the home and the environment even prior to the patient's admission to the treatment facility. Not only the patient but the family and the community need to be re-educated and reoriented and prepared for the needed environmental adaptations. The importance of good parent-child relationship must be stressed and parents must be made to understand that a poor quality of parent-child relationship is responsible for many forms of social maladjustment. A hospital-school residential center must also include adequately staffed outpatient departments in critical areas for follow-up care and for the treatment of the ambulatory narcotic user who may not be in need of hospitalization.

COMMENT

The 167 cases reported in this study do not represent the total number of drug users in the school-age population. Perhaps, many remained undiagnosed and some were referred directly to treatment agencies. It probably represents one-fourth of the total number of users in the schools. Cold statistical facts and numbers, however, do not take into account, nor do they picture, the unhappi-

ness, distress and wretchedness associated with narcotic addiction. Indeed, if one case could be prevented, it would be worth every possible effort.

It is the child who uses the drug who is all-important, and an all-out effort must be made to determine the underlying causes of conflicts and tensions and their prevention. Adolescence is a critical period, associated with many strains and stresses, and many rapid changes occur in physical, mental, emotional, and social development. In our present culture only a relatively few can adapt themselves without some deprivation to the stresses of adolescence. While all try to make equitable adjustments and to resolve their tensions and conflicts, not all succeed. An individual's vulnerability and adaptability to stress is dependent to a large extent on his childhood experiences and previous deprivations. Psychological maladjustment is much greater in adolescents who do not have close, harmonious relationships with their parents and a happy family environment.

Since drug addiction is not truly a disease entity but is symptomatic of a basic personality maladjustment, the mere removal of the source—the supply of the drug—will not suffice. The basic problems must be searched for, and many conditioning and contributory factors and their interactions considered. Psychological ills will be more readily prevented through a comprehensive program of slum clearance, good sanitation, good nutrition, good housing, good quality of parent-child relationship, and by the prevention of needless stresses, discriminations, and emotional deprivations, through a program of good physical and mental health, rather than through any other remedial measures.

SPECIFIC NEEDS

Legislative—(1) Narcotic addiction should be included in the reportable diseases. (This has been in effect in New York State since July, 1952); (2) the supply, importation, distribution, and sale of narcotics at all levels—international, federal, state, and local—must be more stringently controlled; (3) severe punishment should be meted out to sellers or pushers; (4) users of narcotics who are not sellers should be treated as diseased persons, with kindness and sympathy, and not as criminals and law offenders; (5) effective total treatment should be made available promptly without court action. While mandatory treatment in a residential hospital-school facility, where required, is recommended, a mandatory probationary (parole type) follow-up is strongly disapproved; and (6) treatment, after-care, and rehabilitation must be highly individualized and not legislated for all users alike.

Educational—Health education is of incalculable aid in any health program. Here, continued education is urgently needed to teach teen-agers the effects of addiction, how to curtail and prevent addiction and, more important, prevention of social and emotional maladjustment. Pupils must be provided with reliable information without any overdramatization, and told in a simple, but effective manner of all the forces leading to addiction and its ill-effects.

The New York City Health Department used health education extensively during this epidemic. It prepared and distributed educational material for physicians, nurses, teachers, welfare workers, social case workers, and addressed group leaders and health and welfare agencies. Indeed, no request from any source for information and guidance was denied. It is difficult to agree with the view [5] that direct propaganda on drugs is likely to be dangerous because it stimulates curiosity, for knowledge and understanding at all levels is helpful—only ignorance is hazardous. Youth participation is strongly recommended. A discussion of the narcotic problem under the aegis of an able group leader is extremely pro-

ductive. "Gang" leaders may also be utilized to influence their members against usage of drugs and to solicit their behavior to an antidrug campaign.

Adolescents are in need of guidance and direction at this critical period of marked adjustment. They must be helped and guided into productive and useful channels. (Success of the New York City program was due to a combined community effort. The medical, legal professions, and health and welfare agencies participated harmoniously in the solution of the problem. The Welfare Council of New York City did an exceptional educational job in the Narcotic Control Program.)

Research—(1) Further studies on a broad scale are needed; (2) more epidemiologic data must be accumulated; (3) studies and investigations are needed on the cultural, social, and psychological aspects, the psychodynamics of addiction and follow-up studies on treated adolescents to determine efficacy of treatment; and (4) measures must be evaluated to determine the most effective means of preventing not only addiction but other asocial and amoral acts.

CONCLUSION

Narcotic addiction is not an illness in itself but symptomatic of basic underlying personality maladjustments. It is not simply a medical problem but sociolegal and psychological, interwoven and intermixed. It is not enough to study the agent (drug) and its pharmacological effects but the host and the environment and their interrelations must be fully understood.

In the treatment of addiction, preventive as well as therapeutic measures must be applied. The treatment must include a prolonged period in the sheltered environment of a well-staffed residential hospital-school for a period of not less than four to six months. The staff must include many skills and disciplines, all working to rehabilitate the patient to become better equipped to cope with his everyday environment. Total treatment requires extensive individualization and must begin as early as possible before irreversible changes take place.

The prevention of drug addiction will come about when a better knowledge is obtained through comprehensive research studies. Its prevention is a public health problem and it is everybody's business to help eradicate the evil practice and its underlying causes.

ACKNOWLEDGMENT—Appreciation is expressed to Dr. Robert W. Culbert, director, Bureau of School Health, New York City Department of Health.

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A question is voiced at the end of this paper: Is the alteration of established patterns of behavior too much to expect of any single instrument of instruction? The query will echo in the mind of the reader—who, incidentally, will be impressed by the zeal given to making this study technically sound.

A Method for Evaluating the Effectiveness of Health Education Literature*

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THE State of North Carolina, early in 1949, was contemplating a free distribution of a series of mental hygiene pamphlets entitled *Pierre the Pelican*, to all parents of first-born children. The pamphlets and their objective are best described by the author, Loyd W. Rowland [1]:

> The *Pierre the Pelican* series of pamphlets for the parents of first-born children was especially designed to cover good principles of child rearing—beyond the area of physical care. . . . The pamphlets have the following characteristics: They are simple, are cast at the sixth grade reading level, are illustrated by sketches, have the continuity made possible by the character Pierre, comprise a series, make use of questions, are of optimal length, and make an effort to cover topics of principal interest to young parents. They are sent monthly during the first year of the child's life.

The characteristics of the pamphlets, as described, fulfill some of the conditions necessary for the effectiveness of educational literature. These conditions, of themselves, are not sufficient evidence of effectiveness. As clearly stated by Knutson,[2, 3] a final criterion must involve field tests to determine if objectives are met.

Before embarking on a program of distribution, answers to three questions concerning effectiveness seemed highly desirable: Will the pamphlets fulfill in North Carolina the purposes for which they were intended? Will they be equally effective for all demographic groups in the state? Will their effectiveness, if any, justify the cost and effort involved in their distribution?

It was decided to conduct a study †

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* Presented before the Maternal and Child Health Section of the American Public Health Association at the Eightieth Annual Meeting in Cleveland, Ohio, October 24, 1952.

† The initial purchase of the materials plus the expense and labor of mailing them would involve an undertaking of known magnitude and expense. To forward the first copy of the series as soon as possible after birth would require an expediting of the usual routine for registration and processing of birth certificates. Moreover, each month's new births would have to be screened monthly throughout the ensuing year to change addresses as well as to remove the names of parents whose infants had died. The latter detail is rather costly but important if the distributing agency is to avoid the possibility of a traumatic effect upon these parents.

TABLE 1

Selection of Sample to Evaluate Pierre the Pelican in North Carolina

Stratum	Basis of Stratification	Number of Counties Eligible	Number of Counties Selected	Terminal Digit of Birth Certificate Number To Be Used in Sample			
				White		Nonwhite	
				Control	Experimental	Control	Experimental
I	Counties with cities over 50,000	7	3	5	3	2, 6, 8	1, 5, 9
II	Counties with cities 10,000–50,000	18	3	0, 4	3, 7	all even	all odd
III	Counties with cities 2,500–10,000	30	5	0, 6, 8	1, 5, 7	all even	all odd
IV	All rural	45	6	all even	all odd	all even	all odd

to obtain information about the first two of these questions since the cost of a program of universal distribution could be readily estimated in advance.† This paper is intended solely to illustrate the method of the study.

PURPOSE OF STUDY

The objective of the investigation was to measure the effectiveness of the Pierre series upon the parents of first-born children in North Carolina. The measure of effectiveness used was the extent to which parents were motivated to adopt the practices recommended by Pierre. (In this instance, "practices" include all actions and attitudes related to approved methods of child-rearing.)

The objective might be more specifically stated by the following questions: Did the pamphlets produce a more healthful attitude toward problems of child-rearing? To what extent were parents motivated by means of this literature to modify their patterns of behavior in bringing up their first child? Inquiry for the latter was directed toward actual performance of the parents and not the verbalization of correct answers.

The parents eligible for this study were those whose first live child was born from July 1, 1949, to June 30, 1950. The birth also had to be legitimate and registered before the baby was three months old. Since the pamphlets are intended for both parents who are bringing up a child under normal circumstances, homes broken by divorce, death, or other separation were excluded. Cases in which the child was physically handicapped or where the mother was working full time and not immediately directing the child's training were also excluded.

DESIGN OF STUDY

The agencies interested in the distribution of Pierre were agreed, that although preliminary evidence by Rowland [1] had indicated usefulness of the pamphlets, they should plan to study the effects in North Carolina from the start. An experimental and a control study group were set up and the pamphlets mailed to all those not in the latter group. The sample for the study group was selected by classifying the 100 counties in North Carolina into four strata according to the degree of urbanization.* A sample of 17 counties (Table

* The selection of the sample was made with the advice and assistance of the following members of the Institute of Statistics: Drs. Richard L. Anderson, Alva L. Finkner, and Emil Jebe.

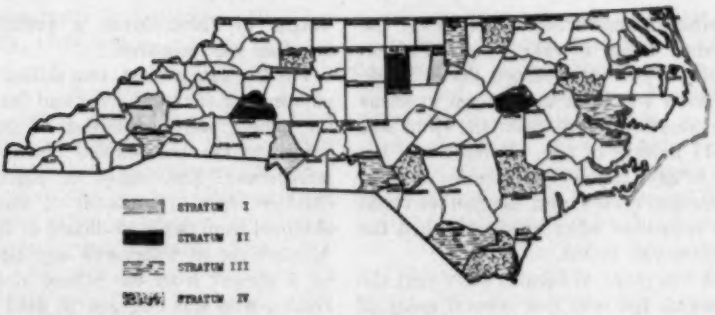

FIGURE 1—Selection of sample to evaluate "Pierre the Pelican" in North Carolina, by stratum.

1 and Figure 1) was selected for the study.

The counties were chosen from each stratum so as to have a high probability of being representative geographically of the three types of regions in the state. Based upon previous birth experience, an expected number of usable first births was calculated in each stratum. This was used to determine a subsampling rate for each race within the various strata so as to have proportional sampling. (These rates are shown in Table 1.) The sampling rates chosen were to provide a number of schedules sufficient for comparisons and tests of significance between the experimental and control groups, by race and residence. The sample was expected to contain around 3,200 families, about 20 per cent of which would be lost because they were either ineligible for reasons stated above or untraceable because of obsolete and incorrect addresses. After the survey was under way, it was found desirable to enlarge the sample by increasing the subsampling rate of the experimental group.

Within each of the 17 counties, the families were assigned at random to either the experimental or control group. The terminal digits of the birth certificate number were used in this process of allocation (Table 1). This reduced the possibility of bias due to differences between counties.

It was hoped that the purposes of the study could be achieved by a schedule of questions which, by leading the respondents to project themselves into a mood or situation, might elicit their attitudes, actions or hypothetical actions in response to those situations. Since this type of information could not be obtained feasibly by a mail questionnaire, personal interviews were used.

FORMULATION OF QUESTIONNAIRE SCHEDULE

The questionnaire was constructed so that an interviewer, with a fair amount of training, could obtain answers to questions which seemed simple to the respondent, although complex in intent and mechanics of asking.

The two senior authors started pilot studies in some of the 83 nonsampled counties which permitted at least one year of experimentation to learn how to ask questions which would give the necessary information, the order of asking them and the respondent's tolerance of the questions. The authors explored means of establishing rapport, of developing suitable probes and determining the threshold of parents' knowledge concerning their probable responses and actions under situations not yet encountered.

Interviews at well-child conferences in some of the nonsampled counties were wire recorded and, as a result of several

months of unstructured interviews, the schedule began to take form. For example, it was soon learned that a single interview was most meaningful in terms of evaluating Pierre when the child was 14–15 months of age. Parents had begun to have problems, the series of pamphlets had ceased, and the mother could still remember what happened when the child was an infant.

At this point, it became clear that the questions fell into five general areas of child training. These were: (1) daily routines of feeding, sleeping and toilet training; (2) learning and development (to walk, talk, use hands, etc.); (3) play habits and social behavior (with toys, other children, strangers); (4) parents' present attitudes and activities (compatibility, social activities, division of labor, etc.); and (5) parents' insight and their plans for the child's future development (answering child's questions, plans for more children, etc.).

Although it was hoped to analyze the combined results from each question by methods of scaling, it was apparent that improper emphasis on one or more of these areas might easily distort the final results. A panel of experts * in the fields of pediatrics and psychiatry, available as consultants to the agencies involved, was questioned on this problem. There was almost unanimity of opinion that the greatest weight should be given to feeding habits and parents' attitudes and activities, particularly as they concern the mother-child relationship. This opinion reinforced the investigators' convictions of the necessity for interviewing the mother, preferably alone. Having obtained a general notion of the relative weight of these areas a preliminary schedule was prepared.

For the first pretest, two skilled interviewers, one for rural areas and the other for urban, were employed to go into homes in the nonsampled counties for interviews. The names of parents of children about 14 months of age were obtained from the State Board of Health. Another set of interviews was obtained by a nurse † from the School of Public Health who was engaged in field training in Cleveland, Ohio. The three interviewers were apprised of the purpose of the questionnaire and by trial and error they continued to improve the questions. A crude item analysis was then made to eliminate those questions which did not help to distinguish between urban-rural or white-nonwhite patterns of child training so that only sensitive and discriminatory questions would be used.

The true purpose of the questionnaire was revealed to neither the respondent nor the persons later employed for the interviewing. Neither group knew about experimental and control families. These conditions we consider essential for a valid determination of effectiveness in studies of this kind. The Pierre series entered into the interview only near the end in what appeared to be a casual manner. There was no reference to the State Board of Health and the interviewer mentioned only the School of Public Health.

All questions and their sequence were designed so as to promote an informal interview. If the respondent's reply was indefinite, probing questions of tested value were available for use. Several buffer questions without relation to the evaluation phase but with health significance, such as the duration of breast feeding, were also included.

The final pretest of the questionnaire was made by 15 interviewers in their home and neighboring counties, using June, 1949, births, and the completed

* The authors gratefully acknowledge the helpful and kind replies received from the following individuals: Drs. David A. Young, Benjamin Spock, Robert B. Lawson, Maurice H. Greenhill, Jasper Hunt, Robert J. Murphy, Lloyd Thompson, and Vernon Kinross-Wright.

† Miss C. Margaret Johnson.

form was ready by September, 1950, for the July, 1949, births.

INTERVIEWERS

To obtain highly competent interviewers, area supervisors of the 1950 federal population census were consulted early about the future employment of their outstanding enumerators. Fifteen interviewers were selected from this group. All were housewives, most of them with college training, and, with few exceptions, in the age range from 30 to 50. It was part-time work for all of them, and their patience and enthusiasm for collecting the material contributed greatly to the quality of the interviews.

A three-day training period with regular classes was held in a central place. Owing to the fact that census enumeration differs in technic from attitude surveys, the first day was devoted to general instructions about this type of interviewing and a detailed review of the entire questionnaire. Before termination of the formal training, each interviewer was tested. As a final effort to improve the interviewing technics, each interviewer completed about ten schedules from among the June, 1949, births, and all errors and omissions were reviewed.

The interviewers' work on the actual survey was spot-checked for completeness and accuracy by a supervisor who visited some of the interviewed families. Every schedule was also checked against specific information available from the birth certificate but which had been withheld from the interviewer.*

NUMBER OF SCHEDULES COLLECTED

In North Carolina from July 1, 1949, to June 30, 1950, there were 21,012 white and 4,381 nonwhite† resident births which could be included in this study since they were properly registered, legitimate first-births. Among this group of children it was learned that infant deaths later removed 612 whites and 229 nonwhites. From the total of 24,552 surviving infants, the sample which was chosen consisted of 3,150 study cases (2,309 whites and 841 nonwhites). There was a loss of 30 per cent of the original sample due to untraceable addresses, the requirement of an intact home, and a few other causes. Reasons for the failure to get complete interviews are presented by race and by study group in Table 2. There were only three refusals to be interviewed.

Within each race, the pattern of the distribution for no interview was almost identical between the experimental and control groups. One slight discrepancy occurred in infant deaths. The names of the control group were not on the mailing schedule for Pierre and infant deaths had not been removed from their list. The remaining children's deaths listed were either missed in the matching process or occurred in the interim between 12 months and the time of interview.

In both the experimental and control groups, 13.5 per cent of the white mothers were working full time whereas only 8 per cent of the nonwhite mothers were doing so. This was possibly due to the fact that relatively more nonwhite mothers were involved with a second child at the time of the interview. The rate of separations of parents among the nonwhite group was almost four times greater than that among the white.

The almost perfect similarity of the experimental and control groups (with exception of infant deaths) gave encouraging evidence of the validity of the controls. There was also additional

* This information included: child's name (interviewer knew only if it was a boy or a girl), mother's and father's ages, and father's occupation. Minor discrepancies in these categories were permitted when they seemed reasonable. Consistent deviation from correct birth certificate data was the means of discovering and discharging one unscrupulous interviewer. All her interviews were rechecked and verified by her replacement or the supervisor.

† Birth statistics for nonwhite include Negro, Indian, and Chinese with 97 per cent Negro, and the remainder predominantly Indian.

TABLE 2

Composition of Original Sample, Classified by Reasons for not Obtaining Complete Interviews by Race and Study Group

Results of Interview Efforts	White		Nonwhite		Total	Per cent of Sample
	Experimental	Control	Experimental	Control		
Complete Interviews Not Obtained	357	319	116	159	951	30.2
Mother working full time	180	128	29	40	377	12.0
Family had moved out-of-state or with no forwarding address	107	97	34	27	265	8.4
Parents separated or dead	30	31	34	41	136	4.3
Family unknown at address	22	31	5	19	77	2.4
Infant died or abnormal	5	21	4	13	43	1.4
Not first child	10	6	7	12	35	1.1
Illegitimate	0	0	3	5	8	0.3
Mother ill	0	1	0	2	3	0.1
Refusals	1	2	0	0	3	0.1
Other *	2	2	0	0	4	0.1
Complete interviews obtained	868	765	288	278	2,199	69.8
Total sample of eligible births	1,225	1,084	404	437	3,150	100.0

* Mother could not speak English, or impossible to reach home for months due to roads and weather.

confirmation obtainable from other variables, such as household composition, age and education of parents, home-ownership, and father's occupation.

The question arose whether control families had read Pierre pamphlets through copies from friends, or some other means, thus tending to dilute any differences between groups and invalidating their use as controls. If differences appeared despite this potential dilution, it would indicate a value of the pamphlets greater than that measured. Fifty (less than 5 per cent) of the control mothers replied that they had seen a monthly pamphlet on child care, and an attempt was made to ascertain if the reference was to Pierre or some other literature. Pierre was not referred to by name to avoid creating the impression of an undue and detailed interest in the series. It was verified that one-half of the 50 mothers actually had seen one or more of the Pierre pamphlets.

SOME RESULTS OF THE SURVEY REGARDING FEEDING HABITS

As an illustration of the method of evaluation used in this study, this preliminary report will partially examine the results of the interviews concerning feeding habits. Obviously, the over-all effectiveness of the Pierre pamphlets cannot be judged from an examination of this limited material. It is hoped that a complete evaluation will be published at a later date.

1. *The first group of questions concerning feeding was designed to learn about the mother's course of action when a child refused to eat certain foods.* Having engaged the mother in conversation about feeding in general, the interviewer tried to find out if there was any food for which the child had shown a dislike. It was noted that 28 per cent of the 2,199 mothers said that their children had never refused a new food when it was first offered. Within this group, there were no significant differences * between the experimental and control or between the white and nonwhite groups.

The remaining 72 per cent of the mothers whose children disliked some food were queried to learn what they did when the child refused to eat that

* Tests of statistical significance used throughout were at the 5 per cent level.

TABLE 3

Food Refusals and Mother's Actions When Children Refused to Eat Particular Foods, by Race and Study Group

Food Refusals and Mother's Action When Refused	White				Nonwhite			
	Experimental		Control		Experimental		Control	
	No.	Per cent of Total Disliking Food	No.	Per cent of Total Disliking Food	No.	Per cent of Total Disliking Food	No.	Per cent of Total Disliking Food
Try again (after one week)	130	20.8	103	18.2	15	7.4	24	13.5
Try again (within one week)	147	23.5	124	21.9	44	21.7	24	13.5
Combine with other foods	83	13.3	81	14.3	23	11.3	22	12.4
Discontinue food altogether	120	19.2	131	23.1	70	34.5	55	30.9
Force or coaxing	142	22.7	124	21.9	51	25.1	52	29.2
Unknown	4	0.6	4	0.7	0	0.0	1	0.6
Total disliking some foods	626	100.0	567	100.0	203	100.0	178	100.0
Liked all foods	242	...	198	...	85	...	100	...
Total mothers interviewed	868	...	765	...	288	...	278	...

particular food. The mothers whose children never refused a food were asked the same question but on a supposition basis—that is, what *would* the mother do if the child refused a food.

Among the mothers for whom this was a hypothetical situation there was no difference between study groups. The results for the remaining mothers, for whom this constituted an actual problem are presented in Table 3.

In both the control and experimental groups, the white mothers followed an almost identical pattern of handling refusals, indicating that no effect could be ascribed to having received the pamphlets. For the nonwhite mothers, there was a nonsignificant trace in the experimental group toward using less forceful means and coaxing the child to eat. On the other hand, there was a greater tendency among them to discontinue the food altogether.

That the question was discriminatory in itself is evidenced by the fact that white mothers definitely tried the food again after one week rather than discontinuing it altogether, as a large share of the nonwhite mothers had done. The white mothers also used less force. Although the data on residence will not be shown here, they indicate that both white and nonwhite urban mothers used significantly less force and tended to try the food again after a week or more.

2. The aim of the *second group of questions was to determine if the mothers were unduly concerned about feeding, as manifested by rigid adherence to a time schedule.* The interviewer not only asked the mother what time schedule she had used in feeding, but attempted to draw out this information in an indirect manner. This was necessary because many mothers vary in their interpretation of "demand feeding" or "four-hour feeding." The purpose of the questions was disguised by phrasing them as follows:

"Did your child sometimes cry between meals because he was hungry? (If 'yes') What did you do about this? Why? (If 'no') Did you ever awaken your child for a feeding? Why?"

White mothers showed no difference between the experimental and control groups, and there was a greater rate of demand feeding among nonwhite control mothers. That the questions were discriminatory is indicated by the finding that nonwhites did 50 per cent more demand feeding than whites, and rural groups more than urban ones.

3. *The third set of questions was con-*

TABLE 4

Feeding Independence at Time of Interview, by Race and Study Group

	White				Nonwhite			
	Experimental		Control		Experimental		Control	
Independence of Feeding	*No.*	*Per cent of Total Sample*	*No.*	*Per cent of Total Sample*	*No.*	*Per cent of Total Sample*	*No.*	*Per cent of Total Sample*
Tries spoon at most meals	328	37.8	278	36.3	100	34.7	71	25.5
Tries spoon once in a while	197	22.7	139	18.2	64	22.2	63	22.7
No spoon, but with hands	193	22.2	199	26.0	73	25.3	76	27.3
Never by himself, no interest	39	4.5	29	3.8	16	5.6	18	6.5
Never by himself, not practical *	111	12.8	120	15.7	35	12.2	50	18.0
Total	868	100.0	765	100.0	288	100.0	278	100.0

* Those mothers who said it was not practical meant that the child did not eat enough, wasted food, dirtied himself or the surrounding area.

cerned with measuring the speed of transition from one method of feeding milk to another, where the change involved any sequence of breast, bottle, and glass or cup. (The pamphlets stress a gradual change-over.) The results were tabulated according to the method of taking milk at the time of interview. There was no significant difference between study groups in the proportion of children drinking milk from a glass or cup at 14–15 months of age. Of those children already drinking some milk from a glass or cup, about 92 per cent had made the transfer gradually, with no difference between the two study groups or the two races.

4. *The fourth area of questioning concerned the procedure of leaving a baby unattended while nursing from a bottle supported by a holder or a pillow.* (The Pierre pamphlets strongly discouraged this practice.) The question was limited to its use during the first eight months of life, since many children have already started to drink from a glass or cup by that time. Moreover, this practice may be less objectionable as the baby gets older. Excluding those who were still nursing at eight months, there was no difference in the proportion of the two study groups in both races who never engaged in this practice.

5. *The final questions were directed to learning if the mother fostered the development of the child's independence, as manifested by encouraging him to feed himself as he develops.* A series of questions were used to ascertain if the mother actually encouraged the recommended practice or only gave lip service to the recommendation.

The children were rated according to their independence in feeding and the results are shown in Table 4. For white children, the degree of independence in feeding appears similar in both groups. Among nonwhite children, however, there is a slight increase in self-feeding from 76 per cent in the controls to 82 per cent in the experimental group, a difference bordering upon statistical significance. This increase in self-feeding was primarily noted in the rural children since urban nonwhite mothers were inclined to discourage it for so-called reasons of practicality.

DISCUSSION AND SUMMARY

Every health agency has an obligation to evaluate the effectiveness of its educational literature. No matter how satisfactorily a piece of literature might appear to fulfill its intended goals, there still remains the need for adequate testing. A true evaluation must inevitably

answer the question, "Does the material fulfill the objective for which it is being used?"

It seemed to the agencies concerned that a planned distribution of *Pierre the Pelican* pamphlets in North Carolina afforded an excellent opportunity to study their effect upon child-rearing practices. Accordingly, a controlled study was devised and is described in this paper. The method employed is not an original one but simply an application of sound statistical and survey methods.

The results in this preliminary report concerning feeding practices show that Pierre's recommendations, of themselves, had relatively little influence upon parents in North Carolina during the period of study. The only evidence in favor of Pierre appeared among nonwhite mothers in connection with the fostering of independent feeding habits. It is well recognized that further analysis of specific groups by age of mother, residence, or educational level may modify these conclusions.

The authors realize that the effectiveness of Pierre, when distributed as in this study, should not be judged solely on the basis of changes in feeding practices.

Furthermore, it is possible that this type of survey is not a true measure of different patterns of behavior between study groups, although this possibility is less likely, in view of the differences discerned between urban and rural, and white and nonwhite groups. It may be that a more complete evaluation of Pierre would require a series of visits to ascertain changes in patterns of behavior.

There was no question that Pierre was favorably received by parents. After the first three months of distribution, self-addressed return post cards were mailed to recipients in all of the 83 nonsampled counties. Of 2,496 cards mailed, 1,265 or 50.7 per cent were returned, and every answer was in favor of continuing the series. Of those returning the cards, about 90 per cent answered that they were saving the pamphlets, and without being asked, 82 per cent volunteered the information that they had found Pierre helpful.

This evaluation shows that in order to affect attitudes and practices, more must be known about how to utilize the complex psychological factors which stimulate persons to action. Also, the alteration of established patterns of behavior may be too much to expect from a single instrument.

ACKNOWLEDGMENTS: It would have been impossible to undertake this study without the consultation, encouragement, and assistance of a large group of professional workers. Dr. David A. Young and Miss Dorothea L. Dolan, North Carolina Hospitals Board of Control, were responsible for making the distribution of Pierre possible and for suggesting the evaluation project. Dr. John A. Clausen, National Institute for Mental Health, was instrumental in both promoting the evaluation project and in designing the plan of study. He also advised on the construction of the questionnaire. The personnel of the Public Health Statistics Section, State Board of Health, who were responsible for maintaining an accurate mailing list and distributing Pierre were: C. R. Council, P. M. Atkins, and Glenn A. Flinchum. Gratitude is also expressed to the conscientious interviewers whose enthusiasm made this study feasible.

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This is the story of 1,500 children with severe orthodontic handicaps who came from families unable to pay the high costs of remedial care. This state-wide rehabilitation program offers them hope for a normal, productive life. Something new!

A Rehabilitation Program for the Dentally Physically Handicapped Child*

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FEW public health programs have emerged fully clad as broad, comprehensive activities developed on the basis of detailed analysis of the problem and described in an all-embracing, complex plan. The more common phenomenon has been the catalytic effect of some immediate dramatic problem resulting in either unusual receptivity to or actual demand for a public health program, and followed by stepwise expansion over the years. Thus, the poliomyelitis epidemic of 1916 was the catalyst for New York State's program for physically handicapped children. To provide rehabilitation care for many of the orthopedically disabled, the State Department of Health established clinic services throughout the state. This type of service did not prove adequate for the great numbers of children requiring the most skilled type of care, often for extended periods of time.

Consequently, in 1925 the State's Children's Court Act was broadened to provide for medical as well as educational aid, on the basis that such assistance would offer handicapped children the greatest opportunity for developing into social assets. According to this Act, a physically handicapped child is anyone under 21 years of age "who by reason of a physical defect or infirmity, whether congenital or acquired by accident, injury, or disease, is or may be expected to be totally or partially incapacitated for education or for remunerative occupation."

It would seem from our current viewpoint that this definition covers many types of defects. And yet, until 10 years ago, the program was almost completely orthopedic in nature. It was not until 1944 that the Division of Orthopedics in the State Department of Health was more appropriately reconstituted as the Bureau of Medical Rehabilitation.

With this new acceptance that defects other than orthopedic could constitute physically handicapping conditions, the Bureau of Dental Health saw promise in exploring the problem of dental rehabilitation, particularly of the severely handicapping malocclusions, for the extended nature of orthodontic treatment has been a factor in creating an economic barrier which cannot be hurdled by

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many families whose children require such attention. Therefore, physically handicapping malocclusion was recognized as a problem coming within the legal provisions of the general state aid rehabilitation program. Accordingly, in 1945 a separate orthodontic care program was initiated, administered by the Bureau of Dental Health.

Before the program could be set in motion, several administrative problems without parallel in the general rehabilitation program demanded solution. Since a large proportion of all children suffer from malocclusions of varying degrees of severity, it became essential to define a "handicapping malocclusion" and to establish a mechanism for determining the eligibility of cases for state aid. Further, a decision had to be made concerning the professional qualifications for orthodontists participating in the program.

To help solve these and several other problems, aid was enlisted from the Northeastern Society of Orthodontists.* The first step was the appointment of five orthodontists to serve as an Advisory Committee. Their functions have been: to advise the department concerning (1) the classification of handicapping malocclusions and whether or not selected patients fit into this classification; (2) training and experience necessary to qualify orthodontists for participation in the state aid program and the qualifications of individual applicants; (3) an equitable fee scale for orthodontic care; (4) progress of treatment of selected cases; (5) orthodontic educational programs and material for professional personnel, including dentists, physicians, dental hygienists, and other interested health personnel; and (6) to assist the department in preparing instructions to orthodontists regarding progress of treatment, preparation of diagnostic aids, etc.

* Formerly called the New York Society of Orthodontists.

In arriving at a workable classification of handicapping malocclusions the Advisory Committee early realized that they could not be too specific or precise in their definitions of handicapping malocclusions because of the infinite number of variations possible in malocclusion, and particularly, the individual variation in what constitutes a handicap. It was not possible to arrive at any definition which included simple objective criteria for evaluating the psychological as well as physical factors that create a physical handicap.

The following classification of handicapping malocclusions was established as a guide in determining the eligibility of cases for inclusion in the state aid program: Malocclusions associated with cleft-palate, cleft-lip, or ankylosis of the temporomandibular articulation; malocclusions resulting from severe structural deformities involving growth and development of the mandible or maxillae, or both: (a) prognathism, (b) retrusion; and (c) micro- or macro-development of the jaws; severe malocclusions resulting from disease or trauma of the mandible or maxillae, or both; and malocclusions resulting in disfigurement or speech defects which may present a serious obstacle to normal development, education, and employment of the patient later in life.

The Advisory Committee faced the problem of recommending the qualifications for those dentists to be enrolled as orthodontic specialists eligible for providing care under the program. In establishing standards, the problem was, on the one hand, to be selective since these orthodontists would be treating particularly difficult cases; on the other hand, it was not desirable to be so restrictive as to cause a shortage of approved orthodontists. It was accordingly established that orthodontists devoting at least 75 per cent of their practice to this specialty were approvable if they qualified under one of the following categories:

(1) Those certified by the American Board of Orthodontics or who meet its requirements for certification, (2) active members of the Northeastern Society of Orthodontists or those eligible for membership; and (3) others (not meeting the requirements of the American Board of Orthodontics or the Northeastern Society of Orthodontists) who submit for review five cases which have been carried through to completion. (These must include study and progress models, x-rays, photographs, and detailed history indicating progress in treatment. This material is submitted to the Advisory Committee on Orthodontics for its recommendations as to the applicant's apparent knowledge and ability.) Currently, the roster of approved specialists includes 99 qualified orthodontists in upstate New York and approximately 100 in New York City.

Potential cases may be brought to the attention of the appropriate local health officer by any interested person, such as a parent, public health nurse, teacher, dentist, dental hygienist, or social worker. As might be expected, public health nurses, school nurses, and school dental hygienists constitute the most active case finders. Special effort has therefore been made to familiarize these groups with the workings of the program and the referral mechanism. On the basis of such referral, the local health officer authorizes a consultation by any licensed dentist of the patient's choice.

This consultant is requested to examine the child and indicate whether, in his opinion, the malocclusion fits into the established classification of handicapping malocclusions. If the dentist indicates that the case does not come within the scope of the program, it is disapproved unless further appeal is made by some other person who feels strongly that the case should qualify.

However, if the examining dentist believes the case definitely qualifies, or that it may qualify, he is instructed to submit diagnostic aids for review and is reimbursed $15.00 for this service. The diagnostic aids must include: (1) a full series of mounted dental x-rays; (2) a set of properly prepared study casts; and (3) a true profile and a full-face photograph showing head and neck only, with mouth in rest position.

These aids together with the written report of the consultation and any other material which may have been submitted are reviewed by the Dental Bureau staff. Cases which leave no doubt as to their eligibility are approved by the director or assistant director. Those which are of borderline eligibility or which present some complicating factor are referred to the Advisory Committee for its recommendation. Many cases, particularly those of mixed dentition, are disapproved with the recommendation that they be resubmitted when the permanent dentition erupts. The local health officer is notified of the decision by the Bureau of Dental Health. For approved cases, he initiates the procedure for obtaining treatment.

Care is provided through the Children's Court Act, the law empowering the judge of the Children's Court to order such services. He may either make the cost a full charge against the county of his jurisdiction, or he may order part or full payment by the parent. The cost to the county for care authorized by the court and approved by the Department of Health is reimbursable through state-aid funds to the extent of one-half of its charges. The Department of Health has jurisdiction over all professional phases of the program, while the Children's Courts make all decisions as to financial eligibility.

On being notified of approval by the Dental Bureau, the local health officer assists the parents in petitioning the Children's Court for care. Care may be provided only by orthodontic specialists on the Health Department's roster, and not more than one year of treatment

TABLE 1

Orthodontic Cases Reviewed by Bureau of Dental Health New York State Exclusive of New York City 1946–1952

Year	Number of New Cases Reviewed *	Cases Approved for Treatment	Cases Not Approved for Treatment
1946	51	30	21
1947	102	49	53
1948	275	125	150
1949	505	314	191
1950	607	331	276
1951	687	327	360
1952 (6 months)	442	251	191
Total	2,669	1,427	1,242
Per cent of Cases Reviewed	100.0	53.5	46.5

* Reviewed in the Bureau of Dental Health prior to submission to the Children's Court for authorization

may be authorized at a time. The maximum fee for first year's treatment is $300 when an orthodontist provides the service in his private office, or $200 when the service is rendered at an approved clinic. More than one year of care is generally required. Accordingly, toward the end of a year's treatment, the orthodontist is requested to submit a progress report. This report includes current information on the course of treatment as well as prognosis. In addition, the orthodontist resubmits the original study casts of the mouth together with new casts indicating the current status. This material is reviewed in the same manner as are original cases and continued care may be approved by court order.

The maximum duration of treatment approvable in the state-aid program is three years and the maximum fee for each of the second and third years of treatment is $200 for private orthodontists and $120 for approved clinics. Therefore, on the basis of $300 for the first year, $200 for each of the second and third years, a maximum of $700 may be approved for active treatment. Provision is also made for a period of retention care following active treatment at a rate not to exceed $5 per visit for a maximum of 12 visits.

In addition, some of the malocclusion cases approved for state aid may require other dental services for the complete rehabilitation of the mouth. Fillings, extractions, dentures, and obturators are approvable for such cases. Speech therapy, particularly for cleft-palate cases, is also obtainable through the program.

It is further recognized that there are oral conditions other than malocclusion and cleft-palate which may constitute a physical handicap. In view of this fact, children requiring full dentures, extensive partial dentures, or other extraordinary dental service to correct a physical handicap may be considered for treatment under the state-aid program. The Veterans Administration fee scale is used as a guide in approving fees for such general dental services, and any dentist licensed in New York State may be approved to provide such care.

Various types of data have been tabulated to demonstrate the quantitative development of the program. For example, we have seen a steady rise in the annual number of cases applying for care in upstate New York, from 51 in 1946,

TABLE 2

Number of Children and Amount Approved for Orthodontic Care
New York State
1949–1951

Year	Number of Children Under Treatment	Total Care Approved	Average Amount Approved per Child
1949	610	$145,345	$238
1950	832	189,881	228
1951	1,105	246,673	223

to 687 in 1951, and 442 for the first half of 1952 (Table 1). During this period, of the 2,669 upstate cases reviewed, 1,427 or 53 per cent have been approved as coming within the scope of the program.

However, in approximately 12 per cent of the new cases approved by the Bureau of Dental Health, court orders were never completed to provide the care. Follow-up on these 169 cases indicates that the primary reason for failure to issue court orders was the parents' unwillingness to submit to the court procedure. The other major reason was the judge's denial of about 3 per cent of all petitions for first year of care.

More detailed information regarding the financial aspects of the program is available only since 1949 (Table 2). In 1951, care was authorized for 1,105 children in the amount of $246,673. The average authorization was $223 per child. These figures include the state and county contributions as well as parent payment. A breakdown of these contributions for the first half of 1952 indicates that for upstate New York, 13.2 per cent of the total costs are assigned to parents while in New York City the parents' contribution is only 0.4 per cent. The remaining cost is borne equally by the state and county.

In view of the fact that up to three years of active orthodontic care may be approved, it is of special interest to determine the actual amount of time required to complete treatment. A study of completed cases, indicates that the average duration of treatment has been 1.9 years. This is especially gratifying since the cases treated under this program generally present complex orthodontic problems. It is apparent that the orthodontists providing these services are extremely conscientious and certainly are not attempting to prolong the period of care.

The cleft-palate/cleft-lip rehabilitation centers are extensions of the dental rehabilitation program. They were established at the Mt. Sinai Hospital in New York City and the Children's Hospital in Buffalo by virtue of contractual agreement with the State Department of Health. Their prime purpose is to evaluate the needs of the cleft-palate/cleft-lip child for complete rehabilitation. These centers fulfill the need for early coordinated consultation by the surgeon, orthodontist, prosthodontist, speech therapist, psychologist, pediatrician, and other indicated specialists. Children may be referred to the centers by local health officers and this diagnostic service is available to such children without fee. For those families that cannot meet the cost for corrective services, the mechanics for providing care are already established through the dental and medical rehabilitation programs (Table 3).

The administration of the dental rehabilitation program has not been devoid of problems even after the establishment of apparently sound procedures. There is the occasional orthodontist who does not agree with the department's decision as to eligibility of a case, the rejected applicant who feels he is being

TABLE 3

Total Amount and Parent Payment Authorized for Orthodontic Care, New York State, January through June, 1952

	Total Amount Authorized	Parent Payment Ordered	Per cent Parent Payment
New York State	$133,124	$9,430	7.1
Upstate New York	69,495	9,190	13.2
New York City	63,629	240	0.4

discriminated against in his request for inclusion in the specialist roster, the judge who suddenly cuts off funds so that even cases which have been under treatment are not approved for essential continued care. There is the occasional study model broken in shipment, and the child who proves completely uncooperative and for whom care must be discontinued.

However, on the whole, the experience with the dental rehabilitation program has been most favorable. The local health officer and his public health nurses are well aware of the benefits of the program as evidenced by their ever-increasing activity in case finding.

The orthodontists of New York State are apparently also satisfied with the program. The outstanding evidence of their attitude is the fact that almost every qualified orthodontist in upstate New York has asked to participate in the program.

The patients themselves, and particularly their parents, have been most grateful for the fine care which they could not otherwise have obtained. And the dental rehabilitation program has afforded us in the Dental Bureau some of our greatest sources of gratification in our work. It is one of the few areas in which administrators of public health programs have been able to approach the type of satisfaction experienced by the clinician.

The current caseload of about 1,500 for all of New York State represents rapid expansion of the dental rehabilitation program. It also represents a very significant budget item. Even if funds were unlimited, there is the further scarcity of trained orthodontists.

These facts point to the great need for a preventive approach. Preventive orthodontics is not, as yet, a very well defined field. However, periodic dental care of good quality, starting at an early age, does prevent premature tooth loss and overretention of deciduous teeth which may be etiologic factors in malocclusion. Regular dental care also promotes early detection of malocclusion and follow-up to prevent the development of the more serious orthodontic defects which are often so difficult to correct. It is essential, therefore, that every practicing dentist apply the knowledge in the field of preventive orthodontics and that the orthodontist direct his attention toward developing new preventive procedures.

For those children who are already dentally handicapped the rehabilitation program offers hope and assurance for normal, happy, and productive lives. The budget investment is sizable, but the dividends to the child and to the community are at the highest continuing level.

ACKNOWLEDGMENT—Earlier in this paper the role of the Advisory Committee on Orthodontics was briefly outlined. The group of men who have worked on this committee are deserving of more than casual mention. Dr. Joseph Eby, Dr. Lowrie Porter, Dr. Jack Salzmann, Dr. Franklin Squires, Dr. Leuman Waugh, and the late Dr. Henry Barber have comprised a most conscientious and valuable advisory working group. They helped launch the program by recommending standards which have proved sound in practice. They are so respected within their profession that they speak for it without fear of challenge by their fellow orthodontists. They have provided us with sessions notable for their animation—as well as their duration. This committee, plus our Buffalo consultants, Dr. Walter Ellis and Dr. Clifford Glaser, have made a major contribution to the success of the program.

Is there a fair way to detect, and prevent, overservicing in a comprehensive, fee-for-service, prepaid medical care plan? From Canadian experience, with a statistical check on departures from normal performance, comes one procedure.

Statistical Analysis as a Basis for Control in Fee-for-Service Plans*†

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A CENTRAL problem faced by administrators of medical care insurance plans lies in the control of payments made to physicians on a fee-for-service basis. Other methods of paying physicians are more attractive to the administrator from the standpoint of fiscal control; but it is obvious that they are not as attractive to the medical profession.

In the fee-for-service method of payment used by the vast majority of medical care plans there is no inherent limit set on the income from the plan for any individual participating physician. Payments made by the plan to any individual physician depend only on the volume and kind of service he performs, even though the payments are based on a predetermined schedule of fees. Since the financial stability of any plan, regardless of the method of payment of physicians, demands that payments into the insurance fund equal or exceed payments out of the fund, there is obviously a limit to the total of the payments that can be made to all the participating physicians. The capitation method of payment automatically balances plan income and outgo by predetermining the sum to be paid to the physician on behalf of each subscriber. Under a salaried system of payment the predetermined amount of money paid by the plan to each participating physician likewise sets the limit on the fiscal liability of the plan. Staying within a fiscal limit is achieved automatically therefore in capitation and salaried plans, although other difficulties may arise. However, in fee-for-service plans, control procedures must be applied to achieve this end.

Pressures for the expansion of physicians' service plans for more comprehensive service are quite evident.[1, 2] Response to these pressures has been a cautious approach by many Blue Shield plans in providing surgical care in the physician's office and the patient's home for specified procedures. A bolder approach by a few plans provides home and office care on a generally unre-

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† Research Paper No. 2, Bureau of Public Health Economics.

‡ Now with the Commission on Financing of Hospital Care.

stricted basis. Historical and present controversy indicate that continued expansion of physicians' service plans will very likely embody the fee-for-service method of payment. The problem of control in such plans, therefore, assumes increasing importance, both with respect to the more efficient operation of already existing fee-for-service plans and to overcoming reluctance to provide more comprehensive physicians' service.

Control procedures used in fee-for-service plans may be classified into two main types: those directed toward the recipients of service, that is, toward control of abuse by subscribers, or overutilization; and those directed toward the providers of service, that is, toward control of abuse by physicians, or overservicing. The limited benefits of the typical Blue Shield plan reflect the assumption that abuse of service by subscribers is of paramount importance. Accordingly, services provided for in these plans are generally limited to patient care in the hospital, a situation more readily subject to constraints. In those Blue Shield plans offering home and office benefits, deterrent charges or coinsurance are generally considered necessary to control overutilization and so maintain solvency.

Analysis of the data available from plans offering comprehensive physicians' care indicates that abuse of service by subscribers is minor.[3, 4] Overutilization appears to be administratively unimportant whether abuse by subscribers is measured in terms of excessive demands for service, "shopping around" for physicians, unreasonable requests for medical attention outside regular hours, or excessive use of service by newly enrolled subscribers.

On the other hand, attention is being increasingly drawn to the abuse of service by physicians. Recent articles have been concerned with unnecessary surgical procedures,[5-7] and unnecessary hospitalization.[8] Lloyd also mentions unnecessary utilization of consultation services, unnecessary prolongation of therapy, and preferential selection of expensive diagnostic and treatment methods.[1] Control of such abuse has been attempted by several procedures in plans offering comprehensive physicians' care. Administrative review of bills by a medical administrator or a committee of physicians, prior authorization for high-cost services, proration, and statistical control formulas have all been tried with varying degrees of success and apparently little satisfaction. Administrative review of bills necessitates personal judgments. The resulting decisions, disallowing payment for services considered to be excessive, may therefore be questioned. Requiring prior authorization is often resented and has had its application chiefly in public medical care programs, particularly those for the needy and medically needy. Moreover, authorizations for service are often based on the availability of funds and are related more directly to the quarterly financial statement than to the need for medical care. Proration as a control technic implies inadequate financing which needs correction either by raising premiums or instituting controls on service. As a matter of fact, proration may even aggravate the situation it was designed to correct. Reduced payments may induce the physician to submit larger bills in an effort to keep income from the plan at an expected level.

Control procedures based on statistical analysis of physicians' practices and subscribers' utilization data are not subject to the criticisms suggested for the procedures discussed previously. They have, however, seldom been used. Criteria for evaluating a control procedure are implicit in the foregoing discussion of control procedures now being used. More specifically, an affirmative answer is required to the following questions:

1. Is the control procedure based on objective standards of practice and service?

2. Is it economically sound, that is, is its application less costly than the abuse of service it has been designed to control?

3. Does the control procedure apply *only* to those physicians who are overservicing, that is, is the procedure sufficiently specific that it does not irritate those physicians practicing within accepted standards?

4. Is it sufficiently sensitive to detect *all* those physicians who are overservicing, that is, does the control procedure eliminate excessive billing by these physicians?

In the development of a control procedure certain factors in the larger social setting of the plan were not considered. Among these are: inflation, the increased cost of medical care due to scientific advances, and the increased demand for service due to greater awareness of the value of modern medical care.

The specific control procedure presented here was based on data obtained from a prepaid comprehensive physicians' service plan in which the participating physicians are in individual practice and are paid by the fee-for-service method.* At the end of 1951, the plan had an enrollment of about 110,000. Complete punched record cards (about 30,000 per month) were made available for three months: May 1950; March, 1951; and January, 1952. Each card represented a rendered service and has punched in it, among other information, the doctor providing the service, the patient to whom it was provided, the kind of service, the "rendered fees," and the "allowed fees." "Rendered fees" mean those fees submitted by the physician. "Allowed fees" are the fees as approved for payment by the plan. This distinction reflects the present control procedure which is an administrative review of submitted bills.

Bills submitted are reviewed by a committee of participating physicians. Only those bills for home, office, and hospital calls are subjected to this review. Bills for "special services" † are routinely scrutinized only for conformity with the fee schedule. Bills for a single call are likewise scrutinized only for conformity with the fee schedule. Multiple services, on the other hand, are considered in the light of the illness, and an attempt is made to arrive at a level of service according to patterns of practice generally followed by the physicians in the plan. If the services rendered a subscriber are judged to be excessive, the committee approves payment only for that number of services considered necessary. In 1951 the reviewing committee reduced the total amount of all physicians' bills by about 6 per cent.

Interest in a control formula stems from previous experience by physicians in the community with a medical care plan for recipients of public assistance.[9] In this medical relief plan a statistical control procedure was used which depended in part on the strict assignment of patients to physicians, that is, the use of a "panel" of potential patients. The present health insurance plan is, of course, quite distinct from the former relief plan, and allows completely free choice of physician at any time. However, on enrollment in the plan, each subscriber is asked to indicate his choice of physician. If the subscriber actually goes to another physician for more than two successive visits, the subscriber's record is changed to indicate this shift. Since these records are not used in the day-to-day administration of the plan, and since about one in five subscribers never indicates a choice of physician the records are not exact. However, the approximate number of potential patients, that is, the number of subscribers stating a given physician as the one they ordinarily go to, was available for all general practitioners. These data serve as a basis for estimat-

* The plan is the Windsor Medical Services, Windsor, Ont., Canada. We gratefully acknowledge their help in making this research possible and their continued interest in the project.

† "Special services" are distinguished from "calls" by their separate listing in the fee schedule of the plan. They include major and minor surgery, radiologic services, refractions, immunizations, and various other specified diagnostic and treatment procedures.

ing the number of patients expected to be seen by a physician in a given month.

Exploratory analysis was performed on the May, 1950, data. The basic questions were: Was there any describable uniformity of behavior among physicians in rendering service? Was the variation such as to provide a basis for detecting suspicious departures from uniform patterns of practice? The statistical problem is to find a numerical description representing usual patterns of practice so that unusual departures may be isolated. In order to enhance the possibility that uniform patterns of practice might be found, the apparently more homogeneous group of general practitioners was selected for study from the approximately 200 participating physicians. (General practitioners are defined by the plan to be physicians who are neither certified by their specialty boards nor restricting their practices to a specialty.) Previous work had indicated the desirability of a further limitation to those general practitioners with a number of potential patients in the plan of 100 or more, since those with fewer potential patients were in the process of beginning practice or retiring from it, and had unusual selections of subscribers. There were 108 general practitioners with a number of potential patients of 100 or more in May, 1950; there were 126 in March, 1951; and 131 in January, 1952.

The data available for examination were, for each physician: (1) "panel size," that is, the number of potential patients; (2) the actual number of patients seen; (3) the number of calls (home, office, and hospital) made; (4) rendered fees for calls; (5) allowed fees for calls; (6) the number of "special services" performed; (7) rendered fees for "special services"; (8) allowed fees for "special services"; (9) rendered fees for total services; and (10) allowed fees for total services.

For purposes of statistical control of payments to physicians it became quite clear that the best basis was the number of patients seen by each participating physician in a given month. It proved unnecessary to consider fees rendered for calls separately from fees rendered for "special services." The number of calls made by each physician, the number of "special services" performed, and the potential number of his patients added little to the prediction of the total fees submitted by each physician. The relationship between the number of patients seen in a given month and the total fees rendered by a physician to the plan for services to these patients was sufficiently close to warrant its use for control purposes.

The relation of total fees rendered by physicians to the number of patients seen by these physicians in January, 1952, is shown in Figure 1. This scatter diagram indicates, as would be expected, that in general those physicians who saw larger numbers of patients submitted total fees which were higher. However, for physicians with the same number of patients, there were important variations. For those physicians who saw 300 patients during the month, the total of bills submitted for payment varied from approximately $1,400 to about $2,300. The diagonal line separates all the physicians into two equal groups according to the average fee per patient (the total of the bills submitted by a physician divided by the number of his patients for that month). Data for the other months investigated were similar.

The figure shows clearly that the average fees per patient charged by individual physicians do tend to be uniform. It may, however, also be seen that while the great majority of physicians do exhibit rather striking uniformity in these charges, there are deviations. It may further be noted that the largest deviations occur mainly in the direction of larger fees per patient, or a greater value for total fees than would be expected

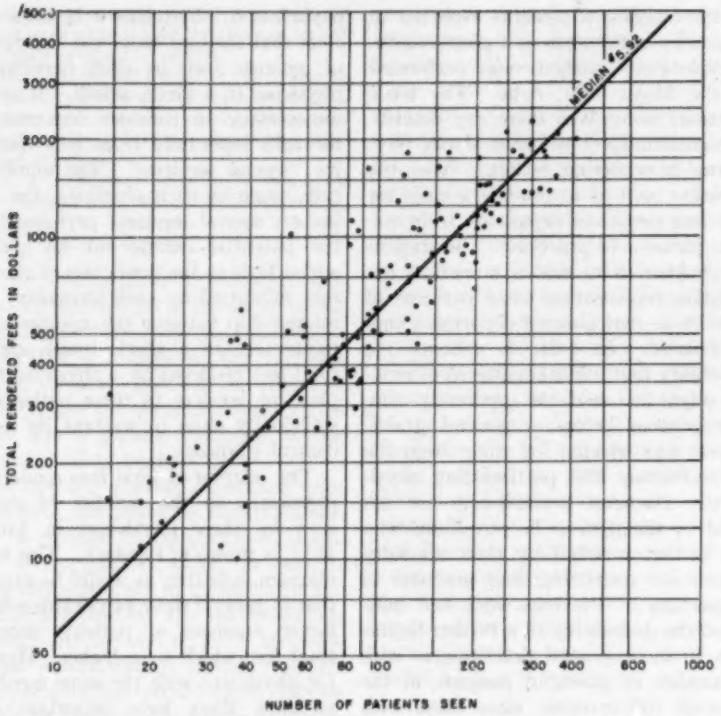

FIGURE 1—Total rendered fees by number of patients seen, 128 * physicians, January, 1952.

* Three of the 131 physicians saw fewer than 10 patients in the plan during the month.

from the number of patients seen. It is these unexpectedly large deviations, in fact, that indicate the usefulness of this analysis for control purposes. These findings are similar to those that might be obtained in industrial quality control when the process being examined was out of control.

In order to develop practical procedures for administrative use in controlling fees, two short-cuts were devised, a graphical procedure and an arithmetical procedure. Figure 2 illustrates the use of the graphical procedure which consists of charting the average fee per patient for each physician on logarithmic normal probability paper.* In January, 1952, the average fees per patient of the 131 physicians ranged from somewhat under $3 to over $20. The physicians are ranked in order of average fee per patient. These ranks are converted into percentage ranks by dividing the

* When each of the variables for the general practitioners was examined to determine the nature of its distribution, it was found that they conformed closely to the logarithmic normal distribution. This indicated that a logarithmic transformation of the data would be useful in two ways. First, by conversion to normal distributions, it made possible statistical assesment of deviations in terms of the probability of their occurrence. Second, the logarithmic transformation meant that correlations would express meaningful relationships between such variables as the actual number of patients seen and the number of potential patients; the actual number of patients seen and the number of calls made; and the number of "special services" performed and the total fees rendered.

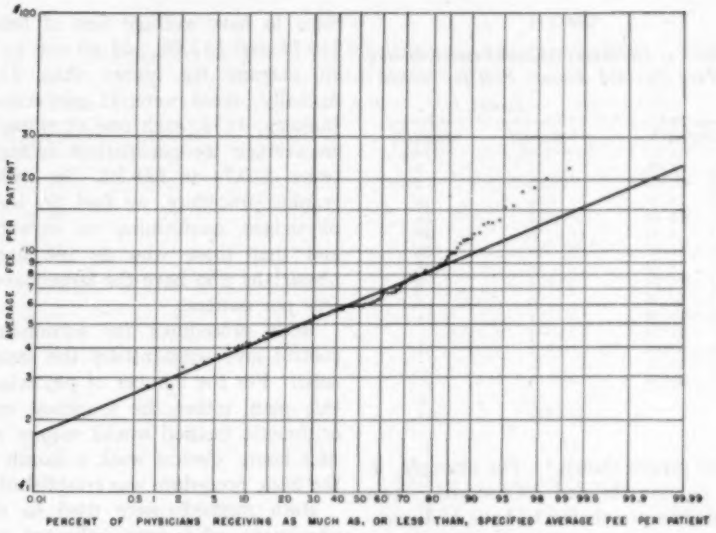

FIGURE 2—Distribution of average fee per patient charged by individual physicians (logarithmic normal paper), January, 1952.

rank by the number of physicians ranked. For example, the physician whose average fee per patient for January, 1952, ranks tenth in order of size among the 131 physicians, in ascending order of fees, would have a percentage rank of $\frac{10}{131} \times 100$, or about 8. The average fee per patient for any physician is plotted against his percentage rank on the logarithmic normal paper.

It may be seen that most of the physicians conform in their behavior to a pattern for the group. This uniform pattern of practice does not mean that each participating physician has the same average fee per patient. The average fee for the month varies from under $3 to over $20, as has been pointed out. It could never be expected, of course, that all of the physicians would have uniform practices to the extent of having their charges represent the same average fee per patient. Some variation must be expected. What leads us to describe this rather wide variation as a uniform pattern is that the number of physicians falling between any two figures for average fee per patient may be successfully predicted. This is shown in Figure 2 by the fact that the physicians' average fees largely fall along a straight line defining a logarithmic normal distribution. Toward the right end of the line, however, there are some physicians whose average fees depart from conformity to this distribution. These physicians departing from the pattern of practice of the group are also noticeable in Figure 1 as departing most widely from the cluster of physicians in that figure.

The second short-cut which may be used as an administrative control procedure consists of an arithmetic calculation. Table 1 shows the number of physicians having average fees per patient

TABLE 1

Numbers of Physicians Observed and Expected to Have Specified Average Fees per Patient

Average Fee per Patient	January, 1952	
	Observed	Expected
$ 2.50 – 2.99	2	2
3.00 – 3.59	4	7
3.60 – 4.31	11	16
4.32 – 5.17	21	26
5.18 – 6.21	36	29
6.22 – 7.45	18	26
7.46 – 8.94	17	16
8.95 – 10.73	5	7
10.74 – 12.88	6	2
12.89 – 15.46	6	..
15.47 – 18.55	2	..
18.56 – 22.26	2	..
22.27 – 26.71	..	..
26.72 – 32.06	1	..
	131	131

in the ranges shown.* For example, in the column headed "Observed," two physicians are shown to have had average fees per patient in January, 1952, of between $2.50 and $3; four, between $3 and $3.59; 11, between $3.60 and $4.31. Skipping to the bottom of the column, we find one physician whose average fee per patient was almost $30. Assuming that all the physicians conform to the pattern of charges exhibited by the majority, we would expect the physicians to charge average fees per patient as shown under the column labeled "Expected."† Thus, it is expected that two physicians would have average fees of between $2.50 and $2.99; and seven, to have average fees of between $3 and $3.59. Note further that we should have expected two physicians to have average fees of between $10.74 and $12.88, and no one to have an average fee higher than $12.88. Actually, there were 17 physicians in January, 1952, each one of whom had an average fee per patient falling between $10.74 to $28.50. As with the graphic procedure, we find the bulk of physicians conforming to expectation and that those who do not are the physicians who have the largest average fees per patient.

Both procedures for administrative control give substantially the same results. For the number of physicians in this plan, either the graphical or the arithmetic method would require about four hours' clerical work a month after the basic procedure was established.

Both methods were used to detect physicians who were indicated to be overservicing in the three months for which data were obtained for analysis. Table 2 lists for each of the three months studied the 17 physicians whose average fee per patient is greater than expected under either the graphic or arithmetic method. In May, 1950, of the 17 physicians whose average fees per patient were highest, the physicians numbered one through nine had average fees of more than $10.74. This value—$10.74—was determined to be the control limit for May, 1950, using the arithmetic control method described above. In March, 1951, the control limit was also determined to be $10.74, and nine physicians were observed to have had average fees per patient exceeding this limit. In January, 1952, there were 17 physicians whose average fee per patient was above the control limit as determined for this month. Four of these physicians, found to be out of control in January, 1952—No. 8, No. 1, No. 2, and No. 4—were also out of control in March, 1951, and in May, 1950. It may be seen that there is a high degree of consistency from month to month, even though the successive months to which the control pro-

* These ranges of average fees were constructed to have a constant ratio between end points of the intervals (rather than the usual constant difference). Thus, $3 = 1.2 × $2.50; $3.60 = 1.2 × $3; $4.32 = 1.2 × $3.60; etc. The use of this set of intervals is equivalent to the use of the logarithmic transformation or plotting on logarithmic paper. This procedure can be used for any set of data. The ratio is arbitrarily selected to form a convenient set of intervals in the same manner as a difference is arbitrarily selected in determining the ordinary set of class intervals.

† The "Expected" numbers were obtained by applying binomial expectations (with $p = 0.5$) to the number of physicians, using the value of n which gives expectations most closely approximating the observed values.

TABLE 2

Average Fee per Patient per Month Rendered by Physicians Having the Highest Average Fees

May, 1950		March, 1951		January, 1952	
Average Fee per Patient	*Physician Number*	*Average Fee per Patient*	*Physician Number*	*Average Fee per Patient*	*Physician Number*
$20.93	No. 1	$23.71	No. 1	$28.50	No. 31
18.59	2	14.92	2	22.00	32
12.27	3	14.40	21	20.03	7
12.19	4	14.36	22	18.32	8
11.24	5	13.90	14	17.76	1
10.86	6	12.01	23	15.43	33
10.82	7	11.76	16	15.08	34
10.78	8	11.61	4	13.36	2
10.76	9	11.20	8	13.13	4
10.64	10	10.42	24	13.04	35
10.49	11	9.65	25	12.95	36
10.07	12	9.58	26	11.87	16
10.02	13	9.24	27	11.80	37
9.94	14	9.09	28	11.16	14
9.58	15	8.82	29	11.16	27
9.07	16	8.78	30	11.07	10
8.93	17	8.52	3	10.79	38

Note: The line in the average fee column for each of the three months separates the values above and below the control limit

cedure was applied were separated by almost a year.* The pattern of practice of the participating general practitioners studied is not only relatively uniform but positions within the array appear to be maintained from month to month.

The analysis indicates that certain physicians differ from the rest in their patterns of charges. Although the reasons for these differences cannot be determined from the data at hand, some information concerning the reasons for the differences exhibited by these physicians is available from the committee of physicians now reviewing bills. There is, first of all, the information as to which physicians in the plan are considered to be overservicing and so have their total rendered fees reduced in any month by the reviewing committee. A comparison was made of the physicians identified by the statistical control procedures as out of control, with those physicians considered by the reviewing committee to be billing the plan excessively. This comparison shows a degree of agreement indicating that the statistical method could be used to replace the costly, time-consuming, and highly subjective review procedure now being used. The statistical control procedure

* The probability of the same four physicians appearing by chance in all three lists of those physicians out of control is less than one in a thousand.

identifies physicians who are overbilling and eliminates from consideration a much larger number of physicians "in control."

The statistical procedure does, however, identify certain other physicians as out of control who, in the judgment of the reviewing committee, are not overservicing. These physicians are among those having larger average fees per patient, but it is because they are partial specialists who perform a larger proportion of costly special services than do the general practitioners in the area. Their average fees per patient cannot be expected to conform to the pattern of fees rendered by general practitioners. It should be possible to identify these partial specialists by other means and to eliminate them from the group of "true" general practitioners, enabling the development of a more precise control procedure for general practitioners. A different control procedure might then be devised for the partial specialists.

SUMMARY

1. Traditional methods of paying for physicians' care are sufficiently strong in the United States at this time so that expansion of health insurance plans in the direction of more comprehensive physicians' service will involve payment on a fee-for-service basis. This method of payment requires satisfactory administrative control to protect the solvency of such plans.

2. The administrative controls that have been applied in fee-for-service plans—administrative review, prior authorization, proration, statistical control formulas—all have certain difficulties. In order to be satisfactory an administrative control procedure must meet the criteria of (a) objectivity, (b) economy, (c) specificity, and (d) sensitivity.

3. A statistical control is obviously objective and frequently economical as compared to other methods. Its specificity depends on describing a pattern of practice for the group of participating physicians, departures from which indicate overservicing. The degree to which this is done without error measures the sensitivity of the control device.

4. A quantitative description was found for the distribution of average fee per patient for general practitioners participating in a comprehensive physicians' service plan using fee-for-service payment. The distribution was logarithmic normal, and departures from the distribution indicate deviations from the pattern of rendered fees for the participating general practitioners.

5. Two short-cut methods based on these findings are presented. Application to data from the plan identified physicians who were overservicing.

6. Control methods based on statistical analysis would serve as useful administrative tools for prepayment plans offering comprehensive physicians' care on a fee-for-service basis.

ACKNOWLEDGMENT—The Bureau of Public Health Economics is indebted to the Rockefeller Foundation for financial support of this research.

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FAMINE OR DISEASE?

THE terror experienced by certain population experts as to the malign influence of public health in promoting too rapid growth of population continues to grow apace and a recent address by Paul F. Russell may be recommended as an antidote to such nightmares.[1] Dr. Russell quotes R. C. Cook on the "dangerous doctors" who are "biological illiterates." "When such men expose millions of their fellow beings to the evils of starvation and disease, they must be made aware of the ignorance and immorality of their acts." Again, sanitarians are "setting the stage for disaster," then, "like Pontius Pilate, washing their hands of the consequences." Dear me! !

The experts on food and agriculture, like public health workers, do not find their sleep broken by such alarming dreams. One expert in the former field estimates that it should be possible to feed a world population of 4 billions instead of the present total of 2.5 billions. Furthermore, the possibilities of artificial photosynthesis lie ahead of us, beyond a not-too-distant horizon.

Whatever quantitative change may occur, it is quite obvious that there must be ultimate limits to population growth; but, as Russell points out, our choice is not between dying of disease or dying of starvation. Indefinitely decreasing the death rate and increasing the birth rate might, indeed, lead us to the catastrophes which Malthus long ago predicted. Such catastrophes can be avoided quite as effectively, however, by lower birth rates as by higher death rates. As Russell says, "Slowly but definitely it becomes widely apparent that restraint of birth has equal importance with restraint of death and that the one is no more unnatural or illogical or impossible than the other; man who has so brilliantly devised measures for restraining death, may be expected to have similar success in regulating birth."

Few can take exception with Myrdal's view that a population policy should permeate the whole fabric of social life.

The history of the past century in the more prosperous areas of the world has provided sound support for such an approach. In opposition to the iron law of Malthus, statistical experience reveals a "golden law" which shows us that as prosperity increases, birth rates decline. Sickness and misery are associated with high fertility, health and prosperity with decreasing birth rates. We may well begin with health protection and economic stimulation, confident that this is the only sure road toward population balance.

It is interesting to note that in Japan where population control has been, in the past, effected chiefly through abortion, contraception under the leadership of the National Ministry of Health is making encouraging strides. A notable event was the third International Conference on Planned Parenthood held at Bombay last November.[2] At this conference a study of popular reactions toward contraception in India showed a widespread desire for family limitation, particularly in the urban areas. The rhythm method has commended itself more readily than other procedures to traditional Indian psychology. But Prime Minister Nehru pointed out to the conference that the government was not committed to any particular procedure and that whatever should prove the most effective means of promoting planned parenthood should be applied to the Indian situation.

In Western Europe and North America, the control of diseases and the promotion of economic prosperity have pointed the way to an approximation to normal population balance; and there is little reason to doubt that in the less favored countries the same upward spiral may be brought into effect. We are not forced to choose between famine and pestilence. If the specter of a third war can be restrained, we can more confidently move forward to a world of health and plenty, as well as of peace.

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A GREAT LEADER IN WORLD HEALTH

WHEN the World Health Organization was organized a little over seven years ago, it was unusually fortunate in two respects. Its sponsors framed a constitution of the widest possible scope, envisaging public health in its most modern and constructive sense; and the Interim Commission was able to find in Brock Chisholm a leader of unparalleled capacity.

Dr. Chisholm's retirement after nearly two years with the Interim Commission and five years as director-general of the World Health Organization closes a notable chapter in the history of public health and of international collaboration. His dealings with individuals were directed by the skill of an experienced psychiatrist; and his vision and courage in program planning were characteristic of a leader of inherent and essential greatness.

In Dr. Chisholm's farewell address to the Sixth World Health Assembly last

spring, he pointed out that "the glaring contrast between the tremendous sacrifices we are forced to make for piling up instruments of war and destruction and the insignificant amount of energy and money we spend for constructive purposes is symbolic of the challenge modern man is facing."

He appreciated the possibilities offered by the machinery set up at Geneva and noted that "a harmonious relationship between a world-minded Assembly, an independent Executive Board and a free and reliable secretariat can overcome practically all handicaps which might interfere with the fullest realization of WHO's potentialities." Furthermore, Dr. Chisholm never visualized the health program as a separate entity. He understood that "there has been no social progress if the physically rehabilitated people merely swell the ranks of the unemployed, dissatisfied, or hungry. The extra labour gained through such campaigns will mean progress only if the people freed from disease are assured of capital investment for production and stabilized markets for distribution, if they are thus guaranteed sufficient work and, in addition, given adequate educational and cultural facilities for themselves and their children." He therefore cooperated to the fullest extent with the FAO, with UNESCO, and with all the other international agencies concerned with human welfare. We owe Brock Chisholm a deep debt of gratitude for steering the World Health Organization so wisely and skillfully on the first stages of its far-flung voyages.

The choice of Dr. M. G. Candau as Dr. Chisholm's successor is an unsually wise one. We all look forward confidently to continuing progress in the coming years.

SOCIAL OR SOCIALISTIC?

THE first meaning of the word "social" in Webster's dictionary is: "something that is or may be associated or allied; hence of, or pertaining to or between, allies or confederates." Only the ninth meaning cited identifies "social" with "socialistic"; and "socialistic" is itself defined as: "of or pertaining to, appropriate to or based on socialism; favoring socialism."

A "social" attitude, in its primary sense, is in our sound American tradition. When the wife of a pioneer was ill, the wife of a neighbor came in to nurse and cook for the family. When a new cabin was to be built, all the neighbors joined together to get the logs in place. In this sense of the word we hope that Americans are socially-minded. They recognize responsibility to the less fortunate members of the community, both as instinctive moral duty and as a practical measure for cementing the bonds of a sound society. On this recognition of mutual common responsibility, measures designed to secure better housing (which has been described as "better kennels for the underdog") and better health care for those of modest income may be properly based without sacrifice of the individual freedoms which underlie the total framework of democracy.

It is curious what a radical change we make in the color or texture of a word when we add "-istic" or "ism" to it. Such suffixes suggest a basic philosophical trend of thought—not dealing empirically with concrete evils, but aiming at some ultimate ideological goal. With "-isms" of any sort, the writer has little sympathy; but because some theorists may desire to alter radically the framework of society, we should not be frightened by words from taking concrete steps toward making individual freedoms a reality, toward extending such freedoms economically as well

as politically. To cooperate in building a better society in which as many individuals as possible enjoy a maximum degree of actual freedom is a legitimate goal. We should be "social" and not "socialistic."

Many years ago Royal S. Meeker, a distinguished economist, had something to say with regard to the then current attitudes toward "social insurance." It should be particularly noted that what Meeker called "social insurance" at that time included primarily measures for unemployment compensation and old-age assistance, now universally accepted as desirable elements in a modern society. Here is what Meeker said:

> "Many earnest people are afraid that social insurance will take away from the working man his independence, initiative and self-reliance, which are so celebrated in song and story, and transform him into a mere spoon-fed mollycoddle. This would be a cruel calamity. But if the worse comes to the worst, I for my part, would rather see a race of sturdy, contented, healthful mollycoddles, carefully fed, medically examined, physically fit, nursed in illness and cared for in old age and at death as a matter of course, in recognition of services rendered or for injuries suffered in the performance of labor, than to see the most ferociously independent and self-reliant super-race of tubercular, rheumatic and malarial cripples, tottering unsocialistically along the socialized highways, reclining self-reliantly upon the communal benches of the public parks and staring belligerently at the communal trees, flowers and shrubbery, enjoying defiantly the social light of the great unsocialized sun, drinking individualistically the socialized water bubbling from the public fountain, in adversity, even eating privately the communistic bread provided in the community almshouses, and, at last, going expensively to rest, independently and self-reliantly in a socialized or mutualized graveyard, full of little individualistic slabs erected to the memory of the independent and self-reliant dead."

Let us be "social" but not "socialistic"!

TRICHINOSIS—A NATIONAL DISGRACE

A NATIONAL conference on trichinosis was held at the American Medical Association headquarters in December of last year and the results of its deliberations deserve wide attention.

Reliable evidence, based on autopsy findings, indicates that some 25,000,000 persons in the United States are believed to have been infected with trichinae. Most of these infections are, of course, symptomless, but it is estimated that some 16,000 clinical cases a year of human trichinosis actually occur, instead of the less than 400 officially reported. Trichinosis is undoubtedly the only communicable disease which is more prevalent in the United States than in any other country of the world. This condition is directly related to the practice of feeding raw garbage to hogs. In our Central States, where hogs are largely corn fed, the incidence of trichinosis in swine is about 0.6 per cent; while on the Eastern Seaboard, where garbage feeding is common practice, the ratio rises to 11.5 per cent. The serious effect of feeding raw garbage was highlighted last year by a widespread epidemic of vesicular exanthema in garbage-fed swine. Fortunately this is a disease not transmissible to man.

There are two possible methods of protection against trichinosis. The first of these consists of subjecting the pork products derived from garbage-fed swine to low temperature or irradiation. Storage for 20 days at freezing temperatures or below has been advocated in the past, but recent studies indicate that the destruction of trichinae may be secured by exposure to a temperature of –18°C. for three days, or by a single rapid cooling to –35°C.

By far the most practical and efficient protection can be secured by requiring the cooking of all garbage fed to hogs, as has been done in Canada and England with excellent results. Federal regulations now require the cooking of all garbage for hog feeding which is transported across state lines and the U. S. Department of Agriculture and the U. S. Public Health Service have prepared an excellent guide for legislation governing sterilization practice.[1]

Since the epidemic of vesicular exanthema, interest in the problem has revived, since the health of the hogs is important, even if that of human beings is not. Nine states have adopted regulations requiring garbage treatment and 28 others are considering action. We may hope that our undesirable pre-eminence with respect to trichinosis prevalence may soon be a thing of the past.

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LETTER TO THE EDITOR

TO THE EDITOR:

Your editorial in the June 1953 issue on the application of the molecular filter membrane to the study of particulate matter in air and water describes succinctly the potential value of this unique device in the field of public health. You will undoubtedly be interested to know that the Chemical Corps, U. S. Army, played a primary role in developing the filter and in making it available to health authorities. A statement of Chemical Corps efforts will complete your account of the recent significant history of this new public health tool.

Information on the membrane filter was first received by the Chemical Corps in 1947 in a F.I.A.T. report of the Technical Industrial Intelligence Branch of the U. S. Department of Commerce who were studying German scientific developments in World War II. Possible usefulness of the MF in routine and emergency bacteriological procedures was recognized and, as a direct consequence, a group of Chemical Corps specialists was sent to Germany to obtain all available data relating to production methods and techniques of application. Alexander Goetz of the California Institute of Technology accompanied the group as a consultant.

A primary finding of this study was that the MF as fabricated in Germany could have only limited application in the field of environmental health control. Some of the shortcomings of the original German MF are listed in your editorial. It was clear that basic research was required before inherent advantages of the MF as a bacterial filtering and culturing device could be realized. An appropriate research program was therefore organized, utilizing the facilities of the Chemical Corps, and, by contract, of the California Institute of Technology. Dr. Alexander Goetz, who was retained as a Chemical Corps consultant, was in charge of the work at C.I.T. As a result of basic modification of the German method of fabrication, an MF with suitable functional characteristics was succesfully produced. Practical techniques were developed for the

application of the MF to air and water analysis.

Because of the obvious significance of the MF in public health, the Chemical Corps apprised the Public Health Service of this development. A supply of MFs and essential accessory equipment were given to the Environmental Health Center of the Public Health Service for research purposes. Information pertinent to the application of the MF was made available, and personnel of the Environmental Health Center were given special training in the use of the MF techniques as developed by the Chemical Corps. Testimony to the intense effort of the EHC in the application of the MF to sanitary analysis of water is apparent in the list of references appended to your editorial.

The contribution of the Chemical Corps did not stop with the development of a laboratory method of fabricating satisfactory MFs. It was necessary that this laboratory process be transferred to plant scale so that the rate of MF production could permit an adequate evaluation of new techniques by the Chemical Corps, EHC and other government agencies interested in this device. A contract was arranged with the Lovell Chemical Company of Watertown, Mass., for this purpose. Technical difficulties were solved, and in 1952 a process was available for the production of MFs in quantity.

It is believed that this statement of the Chemical Corps' effort in making this new development available to the nation will be of interest to the American Public Health Association. Your members should know that, for reasons of national security, specific contributions of unusual scientific merit by Chemical Corps personnel must normally remain unmentioned. However, the Chemical Corps will continue to provide information on its research and development programs that are clearly applicable to the peacetime interests of the nation.

WILLIAM M. CREASY,
Brigadier General, USA
Commanding

LEROY D. FOTHERGILL, M.D.,
Cml C

Chemical Corps Research and Engineering Command, Office of the Commanding General, Army Chemical Center, Maryland

BOOKS AND REPORTS

All reviews are prepared on invitation. Unsolicited reviews cannot be accepted.

Trends of Opinion About the Public Health 1901–1951—*By J. M. Mackintosh. New York: Oxford University Press,* 1953. 201 pp. Price, $3.50.

For nearly half a century we have been accustomed to receive inspiration from such outstanding leaders of British public health as Newsholme, Newman, and Jameson. Today, we gain similar enlightenment from Dr. J. M. Mackintosh, professor of public health at the University of London. His recent book, analyzing the course of public health legislation in England since 1900, should be required reading for the thoughtful student of social medicine.

This work, however, is not primarily a study of the legislation itself, but of its broader relationships to social policy and of the psychological reactions of thoughtful statesmen, of the experts concerned, and of the general public. It is based on official "White Papers," the reports of royal commissions, Parliamentary debates, and letters and editorials in the London *Times,* as well as in professional journals. The task of accumulating such material must have been an arduous one, but also most rewarding as measured by its significant results.

The basic issue, which forms the central theme of this volume, is the conflict between centralization at Whitehall and local and regional autonomy. At the turn of the century, the Local Government Board in London exercised minute control over the activities of the local authorities. The establishment of the Ministry of Health in the 1930's initiated a trend in the opposite direction and stimulated an increasing degree of local autonomy. Furthermore, at the time, there prevailed a broad and constructive concept of the public health program. In the words of Dr. J. P. Kinlock, "one of the fundamental aims of statecraft should be the promotion of the health of the individual to the end that as a race we may grow in health and vigor. The acceptance of this ideal as a guiding principle means, in the first place, that both as administrators and as medical men, or, better, as biologists, we are more concerned with life than with disease."

The passage of the National Health Insurance Act in 1946 appears to have reversed the desirable trend toward decentralization to a most unfortunate degree. Its framers had, perhaps, never read the remarkable statement made by the Sanitary Commission of 1869, "A new statute, therefore, should constitute and give adequate strength to one central authority . . . *not* to centralize administration, but on the contrary, to keep local life in motion—a real motive power and an expert authority to be referred to for guidance and assistance by all the sanitary authorities for local government throughout the country."

There is another administrative problem less sharply emphasized throughout Dr. Mackintosh's book. Assuming that authority is concentrated in the local area, the next urgent need is effective correlation of local programs for conventional disease prevention and health promotion with the closely allied programs for medical and hospital care, for nursing, and for constructive social work. In this respect it seems probable that England has made greater progress than the United States. In particular, the space devoted by Dr. Mackintosh to the problems of housing is significant. A

few of our health departments (Baltimore, Memphis, and Minneapolis, for instance) have recognized the importance of this matter. We are for the most part, however, in real danger of repeating the error made in England where, according to Mackintosh, "we had put the cart before the horse and dealt with demolition before the more urgent problem of overcrowding had been tackled." We must parallel slum clearance by low-rent housing, since overcrowding is a more serious evil than insanitation. We have much to learn from England in regard to rural housing—an area for which we have no effective program whatever in the United States.

So far as coordination in the more strictly medical field is concerned, it appears to the reviewer that the National Insurance and Health Service Acts have widened to a serious degree the regrettable gaps between the health department, the hospital, the medical specialists, and the general practitioner. This is a mistake which we must strive to avoid in the United States.

In general perspective, the first half of the twentieth century has been a period of inspiring achievement. Mistakes have been made, but they have been gradually corrected (as is occurring today with some of the less fortunate phases of the Health Insurance Act). Parsimony rather than true economy has at times dominated social policy. Thirty years ago, the influence of those "who dislike, above all things, to spend money on public health" was powerful in England, as it is in the United States in 1953. "Strenuous efforts were being made to convert the life-saving departments into penny-saving departments." This trend, too, we must resist as it has been effectively resisted across the Atlantic.

Above all, however, we commend Dr. Mackintosh's book to the American reader because it presents so well a fundamental analysis of the social and philosophical principles which must underlie sound progress in any field of social endeavor. We are far too apt in this country to make *ad hoc* decisions on specific points of policy, without testing them by analysis of the basic principles and trends upon which their ultimate efficacy must depend.

C.-E. A. WINSLOW

The Life and Times of Sir Edwin Chadwick—*By S. E. Finer. London: Methuen & Co. Ltd. (British Book Centre, Inc., New York)*, 1952. XI, 555 pp. Price, $9.00.

The name of Edwin Chadwick is known to public health workers. Students of British economic and social history in the nineteenth century find it cropping up ubiquitously in footnote references. And yet, as the Webbs pointed out in their history of the Poor Law, there was no adequate biography of this man who dominated the social landscape of England from 1832 to 1854 and beyond. With the publication of Professor Finer's book, however, this situation has been remedied. We now have a full-scale and definitive account of Chadwick's life and work, and it is unlikely that there will be any need for another biography for some time to come.

Professor Finer has based his study on primary documentary sources, including the hitherto unpublished Chadwick Papers. Due to his access to a mass of completely new material, this important book throws light on many aspects of the early public health movement in England.

Beginning with an account of the early formative influences on Chadwick's mind, chiefly Benthamism and Ricardian political economy, the author takes up, in turn, his work in connection with the revolutionary Poor Law Amendment Act of 1834 and the subsequent Poor Law Commission. The prevention of

pauperism involved the health of the people and Chadwick faced up to the challenge of public health. The climax of the story is reached with the triumph of the public health movement in the 'forties and the creation in 1848 of the General Board of Health. Thereafter, the story is one of an increasingly unsuccessful effort to overcome the onslaught of many powerful enemies and interests. The Board of Health came to an end in 1854, and to all appearances Chadwick had gone down to defeat. Yet in this defeat was his victory, for the basic principles laid down by Chadwick provided the framework upon which the edifice of modern public health was erected. He made possible the creation of an institutional structure within which effective knowledge of health and disease could later be used.

There are numerous details of interest—Chadwick's use of community organization to achieve sanitary reform in local communities, his contempt for doctors, and many other matters. Nevertheless, this is not the place for such detail. It should be pointed out, however, that this is must reading for anyone who wants to know how modern public health in England really got started. There will no longer be any excuse for the mythology which has grown up around Chadwick and the early public health movement.

The volume has a list of all of Chadwick's writings, a chronology, and an index.

GEORGE ROSEN

Food and Population—*By Frank Ligett McDougall. New York: Columbia University Press,* 1952. 47 pp. Price, 15 cents.

The gloomy prophecy that population must inevitably outrun means of subsistance, enunciated by Thomas Robert Malthus in 1798, was not fulfilled; mainly because of advances in food production and distribution he did not anticipate. Conversely, Malthus reckoned on disease, overcrowding, poverty and vice to delay population growth; and modern practice has largely stemmed these scourges. As a result the population of the world now is increasing at a rate of about 25 million persons per year. Enough food to fill this multitude of mouths is no problem in a land of plenty like the United States, but is a most pressing problem considering the world as a whole. And today, with world peace depending upon security for all the peoples of the earth, the question of food and population can only be considered on an international basis. Hence the sponsorship of this pamphlet by the Carnegie Endowment for International Peace.

Clearly it behooves public health workers to be conversant with the relationships of food supply and population. This pamphlet brings the reader authoritatively up to date on the subject, with less than fifty pages of crystal clear prose that may easily be read at a single sitting. The author has the necessary international viewpoint, derived from a quarter century of experience—first with the League of Nations and today with the Food and Agriculture Organization of the United Nations. He has a firm grasp of those aspects of vital statistics, economics, agronomy, anthropology, sociology, and the other disciplines that converge upon the question of food for the world's millions. Mr. McDougall not only shows the basic problems clearly, but also tells concisely what is being done about them, and recommends, most cogently, paths of future action.

By all means read this booklet.

FREDERIC W. NORDSIEK

Sheltered Workshops and Homebound Programs: A Handbook on Their Establishment and Standards of Operations—*By M. Roberta Townsend, Chairman, et al. (1st ed.). New York: National Committee on Sheltered*

Workshops and Homebound Programs, 1952. 71 pp. Price, $1.00.

This compact little handbook contains much useful technical information concerning the organization and operation of the traditional sheltered workshop. Lip-service is given to the newer concepts of the workshop as a part of a total rehabilitation process.

The handbook points out that the workshop can serve several important functions: training, employment, and work therapy. It fails to indicate that the restricted nature of the testing and work situation in most sheltered shops has tended to shunt handicapped persons into a limited number of employment fields. Inadequate attention is given to the selection of the clients who will require the special facilities of the sheltered workshop. Nor is there sufficient emphasis on the need for, or the methods of, reviewing patient status for the earliest possible release from the artificial environment of the sheltered shop.

For a small and, it is to be hoped, diminishing number of handicapped persons, the sheltered workshop or homebound program offers the only feasible outlet for long-term gainful employment or for work therapy. Both programs may offer a variety of other services to such clients to help them achieve a maximum of personal and social usefulness and well-being. The handbook suggests some of these services in a brief section on "Personal Adjustment" and a four-line section on "Auxiliary Services to Employment."

As the only work of its kind, this booklet will prove useful to those concerned with the organization of community rehabilitation programs. Social work personnel should be able better to prepare their clients for admission to, and graduation from, sheltered workshops with the improved understanding of the nature, organization, operation and interests of most of these shops gained from this handbook. A little over a third of this work is devoted to the technical details of the economics of the shop. There is a useful appendix including a summary of appropriate legislation and a listing of national and local agencies concerned with the problems of sheltered workshops and homebound programs. The work is a ringbound, photo offset production.

JONAS N. MULLER

Food-Borne Infections and Intoxications—*By Fred W. Tanner and Louise P. Tanner (2nd ed.). Champaign, Ill.: Garrard Press,* 1953. 769 pp. Price, $12.00.

This book is composed of sixteen chapters dealing with food hygiene, poisonous plants and animals, food-borne bacterial and virus diseases, and a final chapter on metals in food and their possible relation to illness. The format is good and there are few typographical errors. In the preface the authors make the following statement "—Heat stable gastro-intestinal irritants formed by Salmonella and Staphylococcus now furnish a much better explanation of illness caused by foods than the old diagnosis of ptomaine poisoning." The authors make this statement despite the fact that human volunteers fed filtrates and heat-killed cultures of Salmonella did not become ill and epidemiological studies of outbreaks of salmonellosis have shown that living Salmonella were necessary to cause illness. Many outbreaks are described to illustrate the various causative agents.

One outbreak reported under *Salmonella typhimurium* due to corned beef is obviously caused by Staphylococcus enterotoxin, since four laboratory workers eating the specimen within two and one-half hours developed cramps, vomiting and profuse diarrhea. An aerobic streptococcus was reported in large numbers throughout the sample. This outbreak was classed under *S.*

typhimurium since a rabbit developed agglutinins for this organism and for *Salmonella choleraesuis* when injected with sterile filtered emulsions of the food. The authors have made a comprehensive review of the literature without discrimination, leaving the reader to make his own interpretations.

GAIL M. DACK

Food for Your Heart—*Department of Nutrition, Harvard School of Public Health. New York: American Heart Association,* 1952. 48 pp. Price, $.25.

This timely publication should be welcomed by both physician and patient. It is a convenient, simple, and comprehensive manual which outlines the relation of nutrition and diet therapy to heart disease. A special committee of the American Heart Association, headed by Dr. Fredrick J. Stare, Professor of Nutrition, Harvard University, approved this booklet.

Two reduction diets and seven low sodium diets are presented as therapy—not cures—in the treatment of heart disease and hypertension. The low sodium diets are set up at three levels of sodium restriction—mild, moderate and severe. Dietary principles underlying these regimes are given, as well as practical directions for adhering to the diets.

For the patient who is on a low sodium diet, the booklet contains many suggestions useful in the preparation of foods. The special low sodium recipes should have much appeal as they are practical and feature common, well liked foods.

The Appendix includes (1) food lists showing the differences in sodium content among various foods and food groups; (2) a fairly complete list of commercially prepared low sodium products and acceptable salt substitutes; and (3) a short bibliography for patients interested in more detailed information about low sodium diets.

The need for this handbook was indicated by the favorable response of the medical profession to the *Cook Book for Low Sodium Diet* prepared in 1950 by the Massachusetts Heart Association. *Food for Your Heart* will serve as a handy reference for patient, physician, dietitian and nurse. Its attractive style and clarity make for easy reading.

HELEN WALSH

Science vs. Chiropractic—*Pamphlet No. 191, a pamphlet based on official court records, the records of medical examiners, and public statements—By Kathleen Cassidy Doyle. New York: Public Affairs Committee,* 1953. 26 pp. Price, 25 cents.

The Senate of the 1953 New York State Legislature, by a close vote in March, refused approval of a bill to license chiropractors, in spite of a general expectation that the measure would become law.

What happened? Chiropractors, themselves, apparently could not swallow amendments to their original bill which would have limited the areas of chiropractic practice and would have placed restrictions on the usual "grandfather's clause." Thus, New York continues to be one of four states which refuses to license the chiropractic cult.

This pamphlet spells out in authentic, realistic, and understandable terms why chiropractors should have no role in the healing arts, unless qualified in the basic sciences, as has been required of osteopaths in a number of states.

The history of chiropractic, as presented in the pamphlet, is sufficient to persuade any right-minded person that the cult is a menace to the public health. Delineation of chiropractic advertising, pressure groups and experience of licensure, 44 varieties in 44 states, are convincing arguments for those willing to listen with an open mind that the cult should be curbed.

The pamphlet wisely concludes that

"the answer does not lie in laws" but in teaching people to "know what legitimate medical service is . . . where they can get it . . . and how they can avail themselves of it." Strengthening of laws in regard to all the healing arts and a public education campaign in the use of such arts would help to sound the knell of chiropractic. ROBERT W. OSBORN

Nurses Handbook of Obstetrics—*By Louise Zabriskie and Nicholson J. Eastman (9th ed.). Philadelphia: Lippincott,* 1952. 695 pp. 377 illus. Price, $4.75.

This reference book has been designated by the authors for the student nurse and it discusses the principles of obstetric nursing. It is divided into these units: Human Reproduction, Nursing in Pregnancy, Nursing During Labor and Delivery, Nursing During the Puerperium, the Neonatal Period and Additional Maternity Information. Considerable space is devoted to Natural Childbirth, Analgesia and Anaesthesia. The book is easily understandable and the content should prove useful to anyone preparing for examinations or teaching.

Many of the illustrations are new and excellent; some of the others which are old might better have been omitted in this edition. The historical data in the book are sketchy and incomplete. The author emphasizes the contribution of the nurse-midwife and public health nurse to the improvement of maternal and infant care in areas needing health and medical services. The bibliography is selective and uses periodical literature extensively to emphasize points in the text. HATTIE HEMSCHMEYER

A SELECTED PUBLIC HEALTH BIBLIOGRAPHY WITH ANNOTATIONS

RAYMOND S. PATTERSON, PH.D.

Is Truth Relative? This paper is surely not for public consumption, but it should be read by all who have a part in the early-detection features of the cancer control program. One quotation suffices: "Five-year survivals are not appreciably influenced by delays of weeks or months before surgical intervention (for breast cancer)."

BLACK, M. M., and SPEER, F. D. Biologic Variability of Breast Carcinoma in Relation to Diagnosis and Therapy. *New York State J. Med.* 53, 13:1560 (July 1), 1953.

And It Goes Hard With Them—Children exposed to infectious hepatitis come down with the disease in surprisingly large percentages; gamma globulin is highly effective; and adults involved in outbreaks appear relatively immune. The moral of these findings hardly needs laboring here.

BROOKS, B. F., *et al.* Family Outbreaks of Infectious Hepatitis. *New England J. Med.* 249, 2:58 (July 9), 1953.

Plea for Action—Nearly every major activity of a modern state or local health department can help promote sight conservation, which should have high priority in a balanced program. This is the burden of a persuasive presentation of the subject.

DAVENS, E. Health Department Responsibility for Sight Conservation. *Sight-Saving Rev.* 23, 2:80 (Summer), 1953.

Measure of Health—In a suburban area (of Cleveland) six common respiratory illnesses per person-year were "collected." The age and family groups that did most to produce this whopping result are discussed. There are many, many more findings.

DINGLE, J. H., *et al.* A Study of Illness in a Group of Cleveland Families. *Am. J. Hyg.* 58, 1:16 (July), 1953.

They Study Chronic Diseases—To open the panel discussion on research in chronic disease (held at our Cleveland meeting last year) an epidemiologist depicts the kinds of teams that may prove productive, and then he engagingly discusses the strengths and weaknesses—mostly weaknesses—of each. Five other useful papers follow.

GORDON, J. E. Problems of Team Endeavor in the Study of Chronic Disease (and five related papers). *Milbank Mem. Fund Quart.* 31, 3:223 (July), 1953.

Pilot Study—In a state with limited eye-clinc facilities, public health nurses successfully induce glaucoma patients to keep up with their treatments. These days, nurses are surely the modern counterparts of the "George" whom we used to let do everything.

GUTMAN, E. B. Health Department Follow-Up of Glaucoma in Oregon. *Sight-Saving Rev.* 23, 2:77 (Summer), 1953.

Reflex vs. Environment — Even though you have no more to do with safety engineering than you have with the manufacture of the H-bomb, you'll enjoy this bright paper about hedgehogs and men and in-running nips. (The editor thoughtfully explains that "nips" is an English expression meaning crushing hazard—not what you think it means.)

HARVEY, B. H. Control of Environment in the Prevention of Industrial Accidents. *Arch. Indust. Hyg. & Occup. Med.* 7, 6:529 (June), 1953.

Can Mental Illness Be Prevented?—The rule about limiting this bibliography to papers appearing in the scientific press is hereby bent slightly to remind you about the story of the Wellesley Human Relations Service in *Harper's Magazine*. Probably you haven't heard much about this pioneering venture in (preventive) mental health: even if you have, you will want to see this example of interpretive reporting.

HUNT, M. M. The Wellesley Experiment. *Harper's Magazine* 207, 1238:75 (July), 1953.

No "Propaganda Value"—A smallpox outbreak, numbering 145 cases, was the price one British town paid for that country's insistence on freedom to go unvaccinated. In a hurry 19,609 people gave up their cherished freedom and got themselves protected.

INNES, J. Variola Minor in Rochdale and District 1951–1952. *Pub. Health* 66, 9:136 (June), 1953.

Childhood's Perils—A British lady MCH'er suggests that our particular cure-all—health education—is not the only means of preventing home accidents among children. The law could help if public opinion demanded, she says, and she points to some of the ways law enforcement might be used.

JONES, E. C. M. How Far Are Accidents to Young Children at Home Preventable? *Pub. Health* 66, 9:132 (June), 1953.

Public Health—Health and Public—"When we meet a health problem, we must recognize that two kinds of diagnosis and treatment are necessary. We must understand and deal with the health problem. We must also understand and treat the social or public part of the situation. Our pharmacopeia in both

fields must be strong." There are about a hundred other highly quotable passages in this important paper. You will surely find many you can put to your own usage.

LEAVELL, H. R. New Occasions Teach New Duties. *Pub. Health Rep.* 68, 7:687 (July), 1953.

Interesting Facts About Preemies—One of each five premature newborns failed to survive the first month—the smaller the baby the poorer the chances. Girl babies showed definite superiority in ability to survive. Plural preemies do better than single infants. Incidentally, the smaller the hospital, too, the higher the mortality. This from a state-wide roundup.

RICE, R. G., *et al.* Care of the Premature Infant in Massachusetts. *New England J. Med.* 248, 26:1090 (June 25), 1953.

One Journey Into the Unknown—For an absorbing and revealing story of the long struggle against poliomyelitis it would be hard to beat this chronicle prepared for the trustees of the NFIP. Though no promises are made that control is just around the proverbial corner, inevitably the reader is left hopeful that it is.

WEAVER, H. M. Progress in Research on Poliomyelitis. *Pub. Health Rep.* 68, 7:669 (July), 1953.

At Work Are 200 Investigators—". . . the cause of retrolental fibroplasia is unknown and no effective therapy has been discovered." The situation, however, is not quite as black as the gloomy quote suggests.

ZACHARIAS, L. Progress in the Study of Retrolental Fibroplasia. *Sight-Saving Rev.* 23, 2:68 (Summer), 1953.

If additional information is desired regarding the articles listed in this Bibliography, please communicate directly with the publications in which they appeared; the addresses are furnished for your convenience.

Am. J. Hyg. (American Journal of Hygiene), 615 N. Wolfe St., Baltimore 5, Md.
Arch. Indust. Hyg. & Occup. Med. (Archives of Industrial Hygiene and Occupational Medicine), 535 N. Dearborn St., Chicago 10, Ill.
Harper's Magazine, 49 E. 33rd St., New York 16, N. Y.
Milbank Mem. Fund Quart. (The Milbank Memorial Fund Quarterly), 40 Wall St., New York 5, N. Y.
New England J. Med. (New England Journal of Medicine), Massachusetts Medical Society, 8 The Fenway, Boston 15, Mass.
New York State J. Med. (New York State Journal of Medicine), 292 Madison Ave., New York 17, N. Y.
Pub. Health (Public Health), Society of Medical Officers of Health, Tavistock House, South, Tavistock Sq., London, W.C. 1.
Pub. Health Rep. (Public Health Reports), Gov. Ptg. Office, Washington, D. C.
Sight-Saving Rev. (Sight-Saving Review), National Society for the Prevention of Blindness, Inc., 1790 Broadway, New York 19, N. Y.

BOOKS RECEIVED

Listing in this column acknowledges the receipt of books and our appreciation to the senders. Space and the interests of readers will permit review of some, but not all, of the books listed.

ADVANCES IN VETERINARY SCIENCE Vol. I. Edited by C. A. Brandly and E. L. Jungherr. New York: Academic Press, 1953. 431 pp. Price, $9.00.

BASIC BACTERIOLOGY AND ITS BIOLOGICAL AND CHEMICAL BACKGROUND. Carl Lamanna and M. Frank Mallette. Baltimore: Williams & Wilkins, 1953. 677 pp. Price, $10.00.

THE BOOK OF HEALTH. R. Lee Clark, Jr., Russel W. Cumlet, Editors-in-Chief. New York: Elsevier Press, 1953. 768 pp. 1,400 illus. Price, $10.00.

EDUCATORS GUIDE TO FREE FILMS (13th ed.), 1953. Randolph, Wis.: Educators Progress Service, 1953. 516 pp. Price, $6.00, paper.

EDUCATORS GUIDE TO FREE SLIDFILMS (5th ed.), Randolph, Wis.: Educators Progress Service, 1953. 185 pp. Price, $4.00, paper.

FILMS IN THE CARDIOVASCULAR DISEASES. SURVEY, ANALYSIS, AND CONCLUSIONS. Medical Audio-Visual Institute of the Association of American Medical Colleges. New York: American Heart Association, 1953. 128 pp. Price, $1.50, paper; $2.00, cloth.

A FOLLOW-UP STUDY OF THE RESULTS OF SOCIAL CASEWORK. Leonard S. Kogan, J. McVicker Hunt, and Phyllis F. Bartelme. New York: Family Service Association of America, 1953. 115 pp. Price, $2.50.

GROWING UP. Karl de Schweinitz (3rd ed.). New York: Macmillan, 1953. 73 pp. Price, $2.25.

HOUSING AND FAMILY LIFE. J. M. Mackintosh. New York: British Book Centre, 1953. 230 pp. Price, $3.50.

INDUSTRIAL WASTE TREATMENT. Edmund B. Besselievre. New York: McGraw-Hill, 1953. 391 pp. Price, $7.50.

KEEPING OUR HOSPITALS OPERATING. STUDY OF SUPPLY AND EQUIPMENT REQUIREMENTS. U. S. Department of Health, Education, and Welfare. Public Health Service, Publication No. 272. Washington, D. C.: Gov. Ptg. Office, 1953. 185 pp.

LEGAL ASPECTS OF NOISE IN INDUSTRY AND ADMINISTRATION OF WORKMEN'S COMPENSATION LAWS. (2 pamphlets). Transactions of the 17th Annual Medical-Legal Conference and the Legal Conference of the Industrial Hygiene Foundation, 1952. Pittsburgh, Pa.: Industrial Hygiene Foundation of America, Mellon Institute. 47 pp. and 43 pp. Price, $1.00.

NATIONAL HEALTH SERVICE. A GUIDE FOR PRACTITIONERS. Edited by Max Sorsby with a Foreword by Sir Allen Daley. London: F. & S. Livingston. Baltimore: Williams & Wilkins, 1953. 267 pp. Price, $3.00.

NOMENCLATURE AND CRITERIA FOR THE DIAGNOSIS OF THE DISEASES OF THE HEART AND BLOOD VESSELS (5th ed.). Criteria Committee of the New York Heart Association, New York: New York Heart Association, 1953. 359 pp. Price, $4.95.

PRACTICE OF SOCIAL WORKERS IN PSYCHIATRIC HOSPITALS AND CLINICS. Tessie D. Berkman. New York: American Association of Psychiatric Social Workers, Inc., 1953. 158 pp. Price, $2.00.

ROLE OF VOLUNTARY AGENCIES IN TECHNICAL ASSISTANCE. Based on a study sponsored by the American Council of Voluntary Agencies for Foreign Service, Inc., through its Committee on Technical Assistance and Projects. New York: American Council of Voluntary Agencies for Foreign Service, 1953. 176 pp. Price, $1.00.

SCHOOL NURSING IN THE COMMUNITY PROGRAM. Marie Swanson. New York: Macmillan, 1953. 543 pp. Price, $5.00.

STEPS FORWARD IN MENTAL HOSPITALS. PROCEEDINGS OF THE FOURTH MENTAL HOSPITAL INSTITUTE. Washington, D. C.: American Psychiatric Association, 1953. 242 pp.

Preliminary Program of the Scientific Sessions
81st Annual Meeting
American Public Health Association
and
Meetings of Related Organizations
New York, New York
November 9–13, 1953

All meetings will be held in the Statler Hotel and the New Yorker Hotel, except as otherwise noted in the program.

The Registration Desk will be in the Writing Room on the Mezzanine, Statler Hotel, and will open for the registration of delegates at 9:00 A.M. on Monday, November 9, at which time final programs will be distributed. Early arrivals may register on Sunday, November 8, beginning at 2:00 P.M. The registration fee is $4.00.

MONDAY, 9:30 A.M.

GOVERNING COUNCIL

9:30 A.M. and 2:30 P.M.—Parlors 1, A, B, 127, and 129, Statler Hotel

12:30 P.M., Luncheon—Parlor 1, Statler Hotel

Executive Session until 3:00 P.M.

AMERICAN ASSOCIATION OF REGISTRATION EXECUTIVES

First Session—Parlor 2, Statler Hotel

REGISTRATION OF VITAL EVENTS OVERSEAS

Panel Discussion

Statement of the Problem. LOREN E. CHANCELLOR.

What are governmental agencies doing at present and what needs to be done: at overseas stations; in the national government; at state and local levels in the United States?

Discussants: (To be announced.)

General Discussion.

MONDAY, 9:30 A.M.

AMERICAN SCHOOL HEALTH ASSOCIATION

First Session—Ballroom, Statler Hotel

Presiding: H. F. KILANDER, PH.D., *President-Elect.*

Enzymic Composition of the Saliva as a Factor in the Development of Dental Caries. NAOMI C. TURNER.

Tuberculosis Case Finding in Schools. WILLIAM E. AYLING, M.D.

(Other speaker to be announced.)

11:00 A.M.—Business Session

Presiding: GUY N. MAGNESS, M.D., *President.*

President's Report.

Secretary's Report. A. O. DEWEESE, M.D.

Reports of Committees:

School Nursing Policies and Practices. *Chairman,* LYDA M. SMILEY, P.H.N.

Improvement of Status and Functions of School Physicians. *Chairman,* RUTH H. WEAVER, M.D.

Teacher Training in Health Education. *Chairman,* HOWARD S. HOYMAN, Ed.D.

Revision of Constitution and By-Laws. H. F. KILANDER, PH.D.

Election of Council Members.

ASSOCIATION OF BUSINESS MANAGEMENT IN PUBLIC HEALTH

First Session—North Ballroom, New Yorker Hotel

ASSOCIATION OF STATE AND TERRITORIAL PUBLIC HEALTH NUTRITION DIRECTORS

First Session—Suite 111–112, Statler Hotel

CONFERENCE FOR HEALTH COUNCIL WORK

First Session—Parlors F & G, New Yorker Hotel

Presiding: BLEECKER MARQUETTE.

Statement of Principles in Community Planning for Health. Report of the Principles Committee. *Chairman,* THELMA S. ELLIS.

The deliberations of the spring meeting in Cleveland will be submitted for group discussion.

MONDAY, 9:30 A.M.

CONFERENCE OF MUNICIPAL PUBLIC HEALTH ENGINEERS

First Session—Penn Top North, Statler Hotel

Presiding: PAUL W. PURDOM.

Reports of Committees:

Eligibility. *Chairman,* ARTHUR H. HERBERGER, C. E.

Membership. *Chairman,* HENRY E. DRUMWRIGHT.

Special Study Group Appointed to Review the Proposed Recommended Poultry Sanitation Ordinance. *Chairman,* FERDINAND A. KORFF.

Special Study Group to Review Prepublication Draft of Preparation of Refuse for Collection. *Chairman,* RICHARD M. MCLAUGHLIN.

CONFERENCE OF PUBLIC HEALTH VETERINARIANS

First Session—Parlors E & H, New Yorker Hotel

Military Public Health Problems in Korea. CAPTAIN ROBERT A. LOPEZ, USAF, VC.

General Discussion.

Undergraduate Training in Veterinary Public Health—*Panel Discussion.*

Moderator: JOHN H. HELWIG, D.V.M.

Participants: (To be announced.)

CONFERENCE OF STATE AND PROVINCIAL PUBLIC HEALTH LABORATORY DIRECTORS

First Session—Keystone Room, Statler Hotel

Presiding: E. J. SUNKES, DR.P.H.

Available Methods for Improving Laboratory Performance:

Shortage of Technical Laboratory Personnel and Means of Overcoming Such Shortages. EDWIN E. ZIEGLER, M. D.

Technician Training in a Large Hospital. HARRY L. REINHART, M.D.

Refresher Training at the State Level. HELEN GILLETTE.

Refresher Courses at Agencies of the U. S. Public Health Service. RALPH HOGAN, M.D.

Intrastate Evaluation Procedures. JOHN K. MILLER, M.D.

Reference Services for Chemical Examination of Water. PAUL W. KABLER, M.D.

Compatibility Tests in Blood Transfusion: Results of Test Series in 119 Hospital Laboratories. GRETCHEN R. SICKLES.

MONDAY, 9:30 A.M.

CONFERENCE OF STATE DIRECTORS OF PUBLIC HEALTH EDUCATION

First Session—Conference Room 2, Statler Hotel

A DISCUSSION ON WORLD HEALTH AND THE AMERICAN PEOPLE

First Session—Grand Ballroom, New Yorker Hotel

Should the United States "go it alone" without the World Health Organization?

Will the Promotion of World Health Inevitably Create World Over-Population?

Can a United Nations Agency Force Certain Public Health Programs on the American People?

SPONSORED BY

National Citizens Committee for the World Health Organization

Everyone Invited

PUBLIC HEALTH CANCER ASSOCIATION

First Session—Skytop, Statler Hotel

Presiding: LESTER BRESLOW, M.D., *President*.

Methods of Education in Cancer Control. SAVEL ZIMAND.

Psychological Impact of Cancer and Cancer Surgery. ARTHUR M. SUTHERLAND, M.D.

Current Emphasis in the Cancer Control Program of the American College of Surgeons. WALTER E. BATCHELDER, M.D.

MONDAY, 12:30 P.M.

ASSOCIATION OF SCHOOLS OF PUBLIC HEALTH

Luncheon Session—Parlor G, New Yorker Hotel

MONDAY, 12:30 P.M.

CONFERENCE OF MUNICIPAL PUBLIC HEALTH ENGINEERS

Luncheon Session—Penn Top North, Statler Hotel

Presiding: J. ROBERT CAMERON.

Introduction of Guests.

Secretary-Treasurer's Report. BENN J. LELAND.

Business Meeting and Election of Officers.

Presentation of Past Chairman's Award.

CONFERENCE OF PROFESSORS OF PREVENTIVE MEDICINE

Luncheon and Afternoon Session—Panel Room, New Yorker Hotel

Advances in the Teaching of Preventive Medicine—Intramural. R. PERCY VIVIAN, M.D.

Advances in the Teaching of Preventive Medicine—Extramural. HENRY J. BAKST, M.D.

Highlights of the World Conference on Medical Education: Section on Preventive and Social Medicine. JOHN P. HUBBARD, M.D.

Business Meeting and Election of Officers.

NATIONAL CITIZENS COMMITTEE FOR THE WORLD HEALTH ORGANIZATION

Luncheon Session—Grand Ballroom, New Yorker Hotel

Report on the Morning Session—A Discussion on World Health and the American People.

Report on the State of the World's Health—by WHO Representatives.

Everyone Invited

PUBLIC HEALTH CANCER ASSOCIATION

Luncheon Session—Skytop, Statler Hotel

MONDAY, 2:30 P.M.

AMERICAN ASSOCIATION OF REGISTRATION EXECUTIVES

Second Session—Parlor 2, Statler Hotel

Report of the Committee on Confidentiality of Vital Records. *Chairman,* ALBERT BAILEY, PH.D.

Report of the Committee on Uniform Legislation for Birth Records of Adopted Children. *Chairman,* WILLIAM D. CARROLL.

Problems of Intercensal Population Estimation—*Round Tables.*

Participants: (To be announced.)

AMERICAN SCHOOL HEALTH ASSOCIATION

Second Session—Penn Top, Statler Hotel

Presiding: GUY N. MAGNESS, M.D., President.

School Health Services and Health Instruction in Great Neck, Long Island, New York. JOHN L. MILLER.

(Other speakers to be announced.)

ASSOCIATION OF BUSINESS MANAGEMENT IN PUBLIC HEALTH

Second Session—North Ballroom, New Yorker Hotel

ASSOCIATION OF STATE AND TERRITORIAL PUBLIC HEALTH NUTRITION DIRECTORS

Second Session—Suite 111–112, Statler Hotel

CONFERENCE FOR HEALTH COUNCIL WORK

Second Session—Parlors F & G, New Yorker Hotel

Presiding: AUBREY MALLACH.

WHAT IS THE PROPER TRAINING AND CAREER PATTERN FOR HEALTH COUNCIL WORKERS?

Panel Discussion

Moderator: GEORGE M. WHEATLEY, M.D.

Participants:
C. F. MCNEIL.
BERYL J. ROBERTS.
IRA V. HISCOCK, SC.D.
LYMAN S. FORD.

General Discussion.

MONDAY, 2:30 P.M.

CONFERENCE OF MUNICIPAL PUBLIC HEALTH ENGINEERS

Second Session—East Room, New Yorker Hotel

Reports of Committees:
Fees. *Chairman,* CHARLES L. SENN.
Inservice Training. *Chairman,* KARL M. MASON.
Housing. *Chairman,* RALPH J. JOHNSON.
Disaster. *Chairman,* SYDNEY F. DOMMES, JR.

Joint Committee on Sanitation Standards. *Chairman,* MORTON S. HILBERT, C.E.

Report of Representative to Citizens Organization for World Health. SOL PINCUS, C.E.

CONFERENCE OF PUBLIC HEALTH VETERINARIANS

Second Session—Parlors E & H, New Yorker Hotel

RECENT ADVANCES IN THE CONTROL OF RABIES IN ANIMALS

Panel Discussion

Moderator: HILARY KOPROWSKI, M.D.

Participants: (To be announced.)

CONFERENCE OF STATE AND PROVINCIAL PUBLIC HEALTH LABORATORY DIRECTORS

Second Session—Keystone Room, Statler Hotel

Presiding: E. J. SUNKES, DR.P.H.

Relationship of the Venereal Disease Research Laboratory to State Laboratories in National and State-wide Improvements and Control of Serologic Tests for Syphilis. AD HARRIS.

The Role of the State Health Department in the State-wide Improvement and Standardization of Syphilis Serology. GENEVIEVE STOUT.

Two Years' Experience with the Treponemal Immobilization Test: The First Canadian T.P.I. Unit. L. E. ELKERTON, M.D.

Present Status of the Laboratory Diagnosis of Toxoplasmosis. MARION M. BROOKE, SC.D.

Laboratory Diagnosis of Influenza: A Survey of Methods Presently Available. KLAUS HUMMELER, M.D.

Relationship between the Conference of State and Provincial Public Health Laboratory Directors and the Association of State and Territorial Public Health Directors. SAMUEL R. DAMON, PH.D., AND E. J. SUNKES, DR.P.H.

MONDAY, 2:30 P.M.

CONFERENCE OF STATE DIRECTORS OF PUBLIC HEALTH EDUCATION

Second Session—Conference Room 2, Statler Hotel

INTER-AMERICAN ASSOCIATION OF SANITARY ENGINEERING, U.S.A. SECTION

First Session—Parlor A, New Yorker Hotel

(Subject to be announced.) LUIS F. THOMEN, DR. P.H.

Progress in the Development of Bilateral and Multilateral Public Health Programs. WYMAN R. STONE AND GEORGE O. PIERCE.

Report of the Chairman of the U.S.A. Section. EDWARD J. CLEARY.

Business Meeting and Election of Officers.

NATIONAL CITIZENS COMMITTEE FOR THE WORLD HEALTH ORGANIZATION

Second Session—Grand Ballroom, New Yorker Hotel

FIRST ANNUAL MEETING

A review of purposes, planning for 1954, business meeting and election of officers and directors.

Everyone Invited

PUBLIC HEALTH ASSOCIATION OF NEW YORK CITY

First Session—Ballroom, Statler Hotel

WHAT'S NEW IN PUBLIC HEALTH IN NEW YORK CITY

A rapidly moving account of new and interesting public health activities by the people who are actually doing the work—a glimpse of the scope and quality of public health in New York City.

PUBLIC HEALTH CANCER ASSOCIATION

Second Session—Skytop, Statler Hotel

Presiding: LESTER BRESLOW, M.D., *President.*

Environmental Cancer: Recent Developments. W. C. HUEPER, M.D.

Viruses as Antineoplastic Agents. CHESTER M. SOUTHAM, M.D.

Epidemiology of Leukemia. GILCIN F. MEADORS, M.D.

MONDAY, 5:00 P.M.

RECEPTION TO THE PRESIDENT OF THE AMERICAN PUBLIC HEALTH ASSOCIATION

Ballroom, Statler Hotel, 5:00–7:00 P.M., Informal

Admission by badge. Limited to members of the American Public Health Association and their wives.

MONDAY, 6:30 P.M.

CONFERENCE FOR HEALTH COUNCIL WORK

Dinner and Evening Session—East Room, New Yorker Hotel

Presiding: MILTON L. SHURR, *President.*

Business Meeting.

CONFERENCE OF PROFESSORS OF PREVENTIVE MEDICINE

Dinner and Evening Session—Parlor A, Statler Hotel

Business Meeting of the Committee on Medical Care Teaching.

Presiding: CECIL G. SHEPS, M.D., *Chairman.*

(Speakers to be announced.)

CONFERENCE OF STATE AND PROVINCIAL PUBLIC HEALTH LABORATORY DIRECTORS

Dinner Session—Keystone Room, Statler Hotel

Report of the Committee on the Kimble Methodology Research Award.

Research Award: I. H. BORTS, M.D., *Chairman.*

Remarks by the Recipient of the Award.

Dinner Speaker: IVOR GRIFFITH, P.D.

ENGINEERING SECTION AND THE CONFERENCE OF MUNICIPAL PUBLIC HEALTH ENGINEERS

Annual Engineers' Stag Dinner, Skytop, Statler Hotel

MONDAY, 8:00 P.M.

AMERICAN ASSOCIATION OF PUBLIC HEALTH PHYSICIANS

First Session—Parlor 2, Statler Hotel

AMERICAN SCHOOL HEALTH ASSOCIATION

Third Session—Grand Ballroom, North Ballroom, and Parlors F & G, New Yorker Hotel

Grand Ballroom School Health Education Section.

Presiding: HOWARD S. HOYMAN, ED.D.

Behavior-Centered Sex Education. (Speaker to be announced.)

VD Education in Schools. (Speaker to be announced.)

Use of Sex Education Films in Schools. ROSS L. ALLEN, DR.P.H.

North Ballroom School Health Services Section.

Presiding: RUTH H. WEAVER, M.D.

The Role of the Advisory Health Council in the School Health Program. CARL C. FISCHER, M.D.

Public Relations—An Integral Part of a School Health Program. ABRAM COHEN, D.D.S.

Preliminary Report of the Fourth National Conference on Physicians in Schools. DONALD A. DUKELOW, M.D., AND FRED V. HEIN, PH.D.

Parlors F & G School Health Nursing Section.

Presiding: LYDA M. SMILEY, P.H.N.

The Nurse Does Not Work Alone. DELBERT OBERTEUFFER, PH.D.

(Other speakers to be announced.)

ASSOCIATION OF MATERNAL AND CHILD HEALTH AND CRIPPLED CHILDREN'S DIRECTORS

Evening Session—Panel Room, New Yorker Hotel

ASSOCIATION OF RESERVE OFFICERS OF THE U. S. PUBLIC HEALTH SERVICE

Evening Session—Conference Room 2, Statler Hotel

TUESDAY, 8:00 A.M.

COMMISSIONED OFFICERS ASSOCIATION OF THE U. S. PUBLIC HEALTH SERVICE

Breakfast Session—Parlor 1, Statler Hotel

(Open to all U. S. Public Health Service Officers.)

GEORGE PEABODY COLLEGE FOR TEACHERS ALUMNAE

Breakfast Session—Parlors F & G, New Yorker Hotel

NATIONAL ADVISORY COUNCIL, CLEVELAND HEALTH MUSEUM

Breakfast Session—Parlor B, Statler Hotel

TUESDAY, 9:30 A.M.

FIRST SPECIAL SESSION

Ballroom, Statler Hotel

Presiding: (To be announced.)

PUBLIC HEALTH—PRODUCT OF COMMUNITY ACTION

SETTING OUR SIGHTS FOR THE 81ST ANNUAL MEETING

Community Action for Public Health—A Report. HAROLD M. ERICKSON, M.D.

How Does a Community See Its Needs? RICHARD W. POSTON.

How Does a Community React to Its Needs? EARL LOMON KOOS, PH.D.

Setting Our Sights for the 81st Annual Meeting. JOHN D. PORTERFIELD, M.D.

ENGINEERING SECTION

First Session—Keystone Room, Statler Hotel

Presiding: JUSTIN M. ANDREWS, SC.D., *Chairman.*

WASTE DISPOSAL BY CONSERVATION

Public Health Aspects of Waste Treatment by Composting. CLARENCE GOLUEKE AND HAROLD B. GOTAAS, SC.D.

The Use of Oxidation Ponds in Sewage Disposal. DAVID F. SMALLHORST.

Algae Research on Oxidation Ponds. CHARLES E. RENN, PH.D.

Fertilizer Value in Waste Disposal Methods. L. W. VAN KLEECK.

TUESDAY, 9:30 A.M.

EPIDEMIOLOGY AND LABORATORY SECTIONS

Joint Session—Grand Ballroom, New Yorker Hotel

Presiding: KARL F. MEYER, M.D.

RECENT STUDIES IN ENCEPHALITIS AND OTHER VIRUS DISEASES—HUMAN AND ANIMAL

The Need for Criteria Determining the Etiologic Role of Viruses in Disease. ROBERT J. HUEBNER, M.D.

Observations on the Control and Treatment of Smallpox in India. HENRY C. KEMPE, M.D.

Mouse Neutralization Tests for Strains of Poliomyelitis. MORRIS SCHAEFFER, M.D.

The Role of the Mite as a Vector in Encephalitis. WILLIAM C. REEVES, PH.D., S. EDWARD SULKIN, PH.D., AND ROY W. CHAMBERLAIN.

Epidemiological Aspects of Human Infections in the 1952 California Epidemic of Encephalitis. WILLIAM A. LONGSHORE, JR., M.D.

Vampire Bat Rabies in the United States-Mexico Border States. AURELIO MALAGA-ALBA, D.V.M.

The Problem of Vesicular Exanthemata in the United States Today—Diagnosis and Control. R. A. BONKOWSKI, D.V.M.

Ornithosis in Texas. J. V. IRONS, SC.D.

INDUSTRIAL HYGIENE SECTION

First Session—Parlor 2, Statler Hotel

Presiding: WARREN A. COOK, *Vice-Chairman.*

Pneumoconiosis of Coal Miners in the United States. JOSEPH E. MARTIN, JR., M.D.

Diatomite Pneumoconiosis—A Sociomedical Study. HERBERT K. ABRAMS, M.D.

Health Educational Technics in an Occupational Cancer Control Program. (Speaker to be announced.)

Maximum Utilization of Industrial Hygiene Personnel. IRVING R. TABERSHAW, M.D.

TUESDAY, 9:30 A.M.

SCHOOL HEALTH SECTION

First Session—Skytop, Statler Hotel

Presiding: ELIZABETH S. AVERY, PH.D., *Chairman.*

Training Physicians for School Health Service. ROBERT W. CULBERT, M.D., HAROLD JACOBZINER, M.D., AND PHILIP OLLSTEIN, M.D.

A Survey of Health Programs of Teachers Colleges. MARJORIE A. C. YOUNG.

Section Business and Election of Officers.

Committee Reports.

TUESDAY, 12:30 P.M.

DELTA OMEGA

Luncheon Session—Penn Top, Statler Hotel

MATERNAL AND CHILD HEALTH SECTION

Luncheon Session—Ballroom, Statler Hotel

Presiding: RUTH J. RAATTAMA, M.D., *Chairman.*

PUBLIC HEALTH EDUCATION SECTION

Luncheon and Afternoon Sessions—Keystone Room, Statler Hotel

Presiding: RUTH E. GROUT, PH.D., *Chairman.*

SETTING OUR SIGHTS IN PUBLIC HEALTH EDUCATION

Committee Reports.

Discussion of Committee Studies and Activities.

Section Business and Election of Officers.

PUBLIC HEALTH NURSING SECTION

Luncheon Session—Grand Ballroom, New Yorker Hotel

Presiding: DOROTHY WILSON, ED.D., *Chairman.*

An Over-all View of the Current Scene in Local Health Set-ups. ROSCOE P. KANDLE, M.D.

TUESDAY, 2:30 P.M.

DENTAL HEALTH, MATERNAL AND CHILD HEALTH, AND SCHOOL HEALTH SECTIONS, AND THE AMERICAN SCHOOL HEALTH ASSOCIATION

Joint Session—Ballroom, Statler Hotel

Presiding: RUTH J. RAATTAMA, M.D.

HANDICAPPED CHILDREN

The Nation's Handicapped Children; Estimates of the Size of the Problem. ARTHUR LESSER, M.D., AND ELEANOR P. HUNT, PH.D.

Evaluation of Mandatory Reporting of Cerebral Palsy. EDWARD R. SCHLESINGER, M.D., HELEN C. CHASE, AND CLARK LEBOEUF.

Reports of the Committee on Child Health:
Public Health Programs for Cerebral Palsy. SAMUEL M. WISHIK, M.D.
Public Health Programs for Dento-Facial Handicaps. HENRY C. SANDLER, D.M.D.

Special Classes for Handicapped Children. HELEN M. WALLACE, M.D., AND ELENA GALL, PH.D.

A business meeting of the Maternal and Child Health Section follows this session in this room.

EPIDEMIOLOGY SECTION

First Session—Parlors F & G, New Yorker Hotel

Presiding: ALEXANDER G. GILLIAM, M.D., *Chairman.*

Environmental Factors Influencing the Occurrence of Histoplasma capsulatum and Microsporum gypseum in Soil. LOUIS D. ZEIDBERG, M.D., AND LIBERO AJELLO, PH.D.

Epidemiology of Infectious Jaundice in Santiago. ABRAHAM HORWITZ, M.D.

Ten Years of Progress in the Treatment of Syphilis. JAMES K. SHAFER, M.D.

Epidemiology of Cancer. THEODORE ROSENTHAL, M.D., AND ABRAHAM OPPENHEIM, M.D.

Section Business and Election of Officers.

TUESDAY, 2:30 P.M.

FOOD AND NUTRITION SECTION

First Session—Parlor 1, Statler Hotel

Presiding: FREDERIC W. NORDSIEK, *Chairman.*

THE RELATIONSHIP OF RESEARCH AND EDUCATION IN AGRICULTURE AND HEALTH TO INTERNATIONAL NUTRITION PROGRAMS

Panel Discussion

Introduction. LEONARD A. MAYNARD, SC.D.

Participants:

Research and Education in Agriculture. HERRELL DEGRAFF, PH.D.

Research and Education in Health. WILLIAM J. DARBY, M.D.

Adopting Training Programs to the Needs of an Individual Country. ANDROMACHE SISMANIDIS.

HEALTH OFFICERS SECTION

First Session—Penn Top, Statler Hotel

Presiding: JOHN D. PORTERFIELD, M.D., *Chairman.*

THE COMMUNITY AND THE HEALTH OFFICER—A WORKING TEAM

Community Health Organization—An Effective Tool. LEROY E. BURNEY, M.D.

Working with Your Community. KENNETH I. E. MACLEOD, M.D.

Discussant: GEORGE ROSEN, M.D.

Section Business.

INDUSTRIAL HYGIENE SECTION

Second Session—Panel Room, New Yorker Hotel

Presiding: HERBERT K. ABRAMS, M.D., *Chairman.*

(Speakers to be announced.)

Section Business.

TUESDAY, 2:30 P.M.

LABORATORY SECTION

First Session—Skytop, Statler Hotel

Presiding: ALBERT H. HARRIS, M.D., *Chairman.*

The Laboratory in Biological Warfare. JOHN J. PHAIR, M.D.

Control of Trichinosis by Gamma Irradiation of Pork as Applied to a Public Health Program. S. E. GOULD, M.D., FRANK H. BETHELL, HENRY J. GOMBERG, PH.D., AND VERNON B. LINK, M.D.

Bacteriophage Typing of Staphylococcus Isolated in a Burns Treatment Ward. LT. COLONEL L. ROLAND KUHN, MSC, RUSSELL E. BRAME, RUTH L. LATTA, AND CHARLES MATTHIJSSEN, JR.

Phage Typing of the Antibiotic-Resistant Staphylococci. MATTHEW H. FUSILLO, LT. COLONEL RICHARD N. ROERIG, MSC, AND CAPTAIN JOSEPH F. METZGER, MC.

Food Poisoning Due to Toxins of Clostridium welchii. EKKEHARD E. SCHMID, PH.D.

Rapid Screening Method for Isolation of Enteric Pathogens. LT. COLONEL ARVEY C. SANDERS.

Observation on Complement-Fixing Antigens in the Psittacosis Group from the Public Health Laboratory Viewpoint. ROBERT K. GERLOFF AND DAVID B. LACKMAN, PH.D.

Section Business.

MEDICAL CARE SECTION

First Session—North Ballroom, New Yorker Hotel

Presiding: LESTER BRESLOW, M.D.

Studies on Physician Supply and Distribution. RASHI FEIN.

Research in Medical Economics: Patterns and Trends. ODIN W. ANDERSON, PH.D.

The British Columbia Hospital Insurance Service. L. F. DETWILLER.

Section Business and Election of Officers.

PUBLIC HEALTH EDUCATION SECTION

First Session—Keystone Room, Statler Hotel

See page 1198 for program details of this session which follows the Section luncheon.

TUESDAY, 2:30 P.M.

PUBLIC HEALTH NURSING SECTION

First Session—Grand Ballroom, New Yorker Hotel

Presiding: DOROTHY WILSON, ED.D., *Chairman.*

Report of the Secretary. MARY C. CONNOR, R.N.

Reports on Association Activities by the Section Representatives:

Committee on Administrative Practice. MARGARET G. ARNSTEIN, R.N.
Committee on Professional Education. JANICE E. MICKEY, R.N.
Committee on Eligibility. L. ANN CONLEY, R.N.
Executive Board. RUTH FREEMAN, ED.D.

Section Business.

STATISTICS SECTION AND THE BIOMETRICS SOCIETY

Joint Session—Parlor 2, Statler Hotel

Presiding: OSWALD K. SAGEN, PH.D.

MORBIDITY SURVEYS AND MEASUREMENTS

W. THURBER FALES MEMORIAL SESSION

Problems and Results in Morbidity Measurements from Household Surveys. HAROLD NISSELSON.

Survey of Health Needs in Michigan. EDGAR A. SCHULER, PH.D.

The Morbidity Experience of Subscribers to a Prepaid Medical Care Plan. J. R. SMILEY, CAROL BUCK, M.D., ODIN W. ANDERSON, PH.D., AND GEORGE E. HOBBS, M.D.

Discussant:
THEODORE D. WOOLSEY.

A business meeting of the Statistics Section follows this session in this room.

TUESDAY, 5:30 P.M.

UNIVERSITY OF MICHIGAN ALUMNI

Social Hour, 5:30-7:00 P.M., Ballroom, Statler Hotel

UNIVERSITY OF MINNESOTA

Social Hour, 5:30-7:30 P.M., Parlor 1, Statler Hotel

TUESDAY, 8:00 P.M.

MEDICAL CARE SECTION

Second Session—Keystone Room, Statler Hotel

Presiding: EDWIN F. DAILY, M.D., *Chairman.*

PROBLEMS OF GROUP PRACTICE: A CLINICAL CONFERENCE

(Speakers to be announced.)

WEDNESDAY, 8:00 A.M.

THE JOHNS HOPKINS UNIVERSITY ALUMNI

Breakfast Session—Keystone Room, Statler Hotel

MASSACHUSETTS INSTITUTE OF TECHNOLOGY ALUMNI

Breakfast Session—Parlor B, Statler Hotel

UNIVERSITY OF MICHIGAN ALUMNI

Breakfast Session—Skytop, Statler Hotel

UNIVERSITY OF NORTH CAROLINA ALUMNI

Breakfast Session—Parlor A, Statler Hotel

GRADUATES' ORGANIZATION, SCHOOL OF HYGIENE, UNIVERSITY OF TORONTO

Breakfast Session—Parlors E & H, New Yorker Hotel

WEDNESDAY, 9:30 A.M.

DENTAL HEALTH SECTION

First Session—Parlor 1, Statler Hotel

Presiding: THOMAS L. HAGAN, D.D.S., *Chairman.*

A LOOK AT THE CURRICULUM CONTENT OF COURSES OF DENTAL PUBLIC HEALTH AND PREVENTIVE DENTISTRY

Curriculum Content in Schools of Public Health. KENNETH A. EASLICK, D.D.S.

Curriculum Content in Schools of Dentistry. SHAILER PETERSON, PH.D.

Curriculum Content in Schools of Dental Hygiene. MARGARET SWANSON, R.D.H.

Michigan's Summer Topical Fluoride Program. FRED WERTHEIMER, D.D.S.

Section Business.

ENGINEERING SECTION

Second Session—Parlor 2, Statler Hotel

Presiding: DWIGHT F. METZLER, C.E., *Vice-Chairman.*

LAND USAGE

Development of Sanitary Districts for Water, Sewage, Drainage, and Refuse Control. MORTON S. HILBERT, C.E.

Training and Utilization of Sanitary Inspectors in the United Kingdom. A. DENTON OGDEN, M.B.E., F.R.S.I., F.S.I.A.

Subdivision and Fringe Area Control. (Speaker to be announced.)

Environmental Health Problems and the Challenge of National Expansion. (Speaker to be announced.)

The Richmond Housing Sanitation Program. H. CLIFFORD MITCHELL.

WEDNESDAY, 9:30 A.M.

EPIDEMIOLOGY AND LABORATORY SECTIONS

Joint Session—Keystone Room, Statler Hotel

Presiding: COLONEL THOMAS F. WHAYNE, MC, USA.

INFLUENZA

Influenza Today. COLONEL THOMAS F. WHAYNE, MC, USA.

Acute Respiratory Illness and Influenza at Fort Leonard Wood, 1952–1953. MAURICE R. HILLEMAN, PH.D.

Influenza Vaccination at Fort Dix, New Jersey. JONAS E. SALK, M.D.

Influenza Vaccination at Fort Ord, California. EDWIN H. LENNETTE, M.D.

Influenza Vaccination of Civilian Populations. JOSEPH A. BELL, M.D.

Strain Variation and Cross Relationships in Influenza Virus. KEITH E. JENSEN, M.D.

FOOD AND NUTRITION AND HEALTH OFFICERS SECTIONS

Joint Session—Skytop, Statler Hotel

Presiding: JOHN D. PORTERFIELD, M.D.

THE NUTRITION MANUAL FOR PUBLIC HEALTH ADMINISTRATORS

A nutrition manual for public health administrators has been drafted by the Subcommittee on Nutrition Practice, Committee on Administrative Practice. This meeting has been scheduled as a working conference to secure suggestions for improvement of the manual before final publication.

The Nutrition Manual for Public Health Administrators. DANIEL BERGSMA, M.D.

Individual reading and review of mimeographed manual by all present.

Group discussions of the manual.

Reports of group discussions with group recommendations.

INDUSTRIAL HYGIENE AND MEDICAL CARE SECTIONS

Joint Session—Penn Top, Statler Hotel

Presiding: HERBERT K. ABRAMS, M.D.

THE IMPACT OF LABOR HEALTH PLANS

(Speakers to be announced.)

WEDNESDAY, 9:30 A.M.

MATERNAL AND CHILD HEALTH SECTION

First Session—North Ballroom, New Yorker Hotel

Presiding: RUTH J. RAATTAMA, M.D., *Chairman.*

Home Safety and Accident Prevention for Infants and Young Children. HAROLD JACOBZINER, M.D.

How to Use Financial Data in Program Planning. HARVEY L. SHAPIRO.

Congenital Heart Disease in a Medical Rehabilitation Program. HELEN M. WALLACE, M.D., MIRIAM LENDING, M.D., HERBERT RICH, ANNE M. BAHLKE, M.D., AND WILLIAM E. MOSHER, JR., M.D.

How a Community Cardiac Clinic Serves the Schools. GEORGIA B. PERKINS, M.D., MILDRED E. DOSTER, M.D., AND H. J. DODGE, JR., M.D.

PUBLIC HEALTH EDUCATION AND PUBLIC HEALTH NURSING SECTIONS, AND THE AMERICAN SCHOOL HEALTH ASSOCIATION

Joint Session—Ballroom, Statler Hotel

Presiding: DOROTHY WILSON, ED.D.

HEALTH EDUCATION WITH EMPHASIS ON HOME ACCIDENT PREVENTION

Panel Discussion

(Participants to be announced.)

SCHOOL HEALTH SECTION

Second Session—Parlors A, E & H, F and G, New Yorker Hotel

OPEN COMMITTEE MEETINGS

Parlor G **Committee on School Nursing.** FLORENCE L. FOGLE, R.N., *Chairman.*

Parlor A **Committee on School Health Records.** C. MORLEY SELLERY, M.D., *Chairman.*

Parlors E & H **Committee on School Health Service Statistics.** ALAN FOORD, M.D., *Chairman.*

Parlor F (To be announced.)

WEDNESDAY, 12:30 P.M.

DENTAL HEALTH SECTION

Luncheon Session—Parlor A, Statler Hotel

Presiding: THOMAS L. HAGAN, D.D.S., *Chairman.*

TENTH ANNIVERSARY LUNCHEON

Dental Public Health Accomplishments and Predictions. JOHN W. KNUTSON, D.D.S.

ENGINEERING SECTION

Luncheon Session—Parlor 2, Statler Hotel

Presiding: JUSTIN M. ANDREWS, SC.D., *Chairman.*

History of the Engineering Section and Trends of Its Professional Composition. JUSTIN M. ANDREWS, SC.D., DWIGHT F. METZLER, C.E., AND MORTON S. HILBERT, C.E.

FOOD AND NUTRITION SECTION

Luncheon Session—Conference Room 2, Statler Hotel

Presiding: FREDERIC W. NORDSIEK, *Chairman.*

(Subject to be announced.) A. DENTON OGDEN, M.B.E., F.R.S.I., F.S.I.A.

Section Business.

HEALTH OFFICERS AND LABORATORY SECTIONS

Luncheon Session—Keystone Room, Statler Hotel

Presiding: ALBERT H. HARRIS, M.D.

The following subjects are planned for discussion at separate tables with a qualified discussion leader at each table: Recruiting physicians for health departments; facing up to budget cuts; syphilis serology; poliomyelitis; virus diagnostic laboratories; antibiotics; *M. tuberculosis*; staphylococcus food poisoning and staphylococcus phage typing; leptospirosis; and biological warfare—role of health departments and laboratories in civil defense.

Members of other Sections are cordially invited.

MEDICAL CARE SECTION

Luncheon Session—North Ballroom, New Yorker Hotel

Presiding: EDWIN F. DAILY, M.D., *Chairman.*

WEDNESDAY, 12:30 P.M.

STATISTICS SECTION

Luncheon Session—Penn Top, Statler Hotel

Presiding: OSWALD K. SAGEN, PH.D., *Chairman.*

Section Business.

WEDNESDAY, 2:30 P.M.

GOVERNING COUNCIL

Second Meeting, Parlor 1, Statler Hotel

COORDINATING COMMITTEE ON LABORATORY METHODS AND THE LABORATORY SECTION

Joint Session—Parlor 2, Statler Hotel

2:30–3:30

SUBCOMMITTEE ON STANDARD METHODS FOR THE EXAMINATION OF WATER AND SEWAGE

Presiding: F. WELLINGTON GILCREAS, *Chairman.*

Evaluation of Membrane Filter Technic for the Bacteriologic Examination of Water. Report of the Subcommittee on Standard Methods for the Examination of Water and Sewage. F. WELLINGTON GILCREAS, *Chairman.*

Detection and Occurrence of Coxsackie Viruses in Sewage. SALLY M. KELLY, PH.D.

3:30–5:00

SUBCOMMITTEE ON STANDARD METHODS FOR THE EXAMINATION OF DAIRY PRODUCTS

Presiding: ARCHIE H. ROBERTSON, PH.D., *Chairman.*

Plating Media Certification: A Progress Report. LEON BUCHBINDER, PH.D., JOHN W. FERTIG, PH.D., AND LUTHER A. BLACK, PH.D.

APPLICATIONS AND INTERPRETATIONS OF TESTS FOR THE COLIFORM GROUP, AS APPLIED TO DAIRY PRODUCTS

Coliform Densities in Pasteurized Dairy Products. JACQUES ARCHAMBAULT, D.SC.

The National Research Council Study on Milk Regulations and Milk Quality. A. C. DAHLBERG, PH.D.

Discussants:
LEON BUCHBINDER, PH.D.
LUTHER A. BLACK, PH.D.

WEDNESDAY, 2:30 P.M.

DENTAL HEALTH, PUBLIC HEALTH EDUCATION, AND SCHOOL HEALTH SECTIONS

Joint Session—Ballroom, Statler Hotel

Presiding: ELIZABETH S. AVERY, PH.D.

HEALTH INTERESTS OF THE ADOLESCENT

Panel Discussion

(Participants to be announced.)

ENGINEERING AND INDUSTRIAL HYGIENE SECTIONS

Joint Session—Skytop, Statler Hotel

Presiding: JUSTIN M. ANDREWS, SC.D., AND HERBERT K. ABRAMS, M.D.

INDUSTRIAL SANITATION

Moderator: (To be announced.)

Industrial Sanitation—A Specialized Aspect of Environmental Sanitation. LT. COLONEL ALVIN F. MEYER, JR.

Industrial Sanitation from the Point of View of the Industrial Hygiene Engineer. CHARLES D. YAFFE.

The Sanitary Engineer. J. LLOYD BARRON, C.E.

The Private Consultant. SOL PINCUS, C.E.

The Public Health Aspects of Atmospheric Pollution. FRANK PRINCI, M.D.

FOOD AND NUTRITION, MATERNAL AND CHILD HEALTH, AND STATISTICS SECTIONS, AND THE AMERICAN SCHOOL HEALTH ASSOCIATION

Joint Session—Penn Top, Statler Hotel

Presiding: NORMAN JOLLIFFE, M.D.

DIETARY INTAKE AND PHYSICAL GROWTH

The Collection and Analysis of Dietary Intake Data. ROBERT B. REED, PH.D., AND BERTHA BURKE.

Methodology for the Analysis and Interpretation of Physical Measurements. A. HUGHES BRYAN, M.D.

(Other speakers to be announced.)

WEDNESDAY, 2:30 P.M.

LABORATORY SECTION

Second Session—Keystone Room, Statler Hotel

Presiding: THEODORE ANDERSON, PH.D., AND HENRY WELCH, PH.D.

ANTIBIOTICS AS RELATED TO PUBLIC HEALTH

The Isolation of Unidentified Penicillin-Resistant Bacteria from Blood Cultures. CHARLES M. CARPENTER, M.D., ERIC L. NELSON, PH.D., DORIS MONROE, AND ELSIE LEHMAN.

The Role of the Laboratory in Antibiotic Therapy. BERNARD M. WAGNER, M.D.

Rationale of Routine Disc Plate Sensitivity Testing. HOWARD E. LIND, PH.D.

Public Health Aspects Concerning the Development of Antibiotic-Resistant Staphylococci. AMEDEO BONDI, JR., PH.D.

Aureomycin and Chronic Respiratory Disease in Chickens. ROBERT H. WHITE-STEVENS, PH.D.

Residual Levels of Antibiotics in Animal Tissues After Use of Antibiotics. H. G. LUTHER, PH.D., W. M. REYNOLDS, PH.D., AND R. C. KERSEY, PH.D.

Use of Antibiotics and Antibiotic Residues in Research Animal Stock Diets. CHARLES A. SLANETZ, PH.D.

MEDICAL CARE SECTION AND THE AMERICAN ASSOCIATION OF HOSPITAL CONSULTANTS

Joint Session—North Ballroom, New Yorker Hotel

Presiding: DEAN A. CLARK, M.D.

Community Organization Aspects of a Hospital Survey. HENRY R. MASON.

Appraisal and Priority Standards for Community Hospital Surveys. C. RUFUS ROREM, PH.D.

Film Showing: "On This Day," produced by the Health Insurance Plan of Greater New York.

Introduction: GEORGE ROSEN, M.D.

PUBLIC HEALTH NURSING SECTION

Second Session—Parlors F & G, New Yorker Hotel

Presiding: DOROTHY WILSON, ED.D., *Chairman.*

Reports of Research.

Section Business and Election of Officers.

WEDNESDAY, 8:30 P.M.

FIRST GENERAL SESSION

Ballroom, Statler Hotel

Presiding: WILTON L. HALVERSON, M.D., *President,* American Public Health Association.

Addresses of Welcome:

JOHN F. MAHONEY, M.D., Commissioner of Health of New York City.

HERMAN E. HILLEBOE, M.D., Commissioner of Health of New York State.

Greetings from Scotland. SIR ANDREW DAVIDSON.

Presidential Address. WILTON L. HALVERSON, M.D.

Announcement of New Officers, Resolutions.

Presentation of Sedgwick Memorial Medal.

Dancing. Informal.

THURSDAY, 8:00 A.M.

UNIVERSITY OF MINNESOTA

Breakfast Session—Parlor 1, Statler Hotel

YALE UNIVERSITY ALUMNI

Breakfast Session—Keystone Room, Statler Hotel

THURSDAY, 9:30 A.M.

DENTAL HEALTH AND MEDICAL CARE SECTIONS, AND THE AMERICAN SCHOOL HEALTH ASSOCIATION

Joint Session—Keystone Room, Statler Hotel

Presiding: HENRY C. DANIELS.

PREPAYMENT DENTAL CARE

(Speakers to be announced.)

THURSDAY, 9:30 A.M.

ENGINEERING SECTION AND THE CONFERENCE OF MUNICIPAL PUBLIC HEALTH ENGINEERS

Joint Session—North Ballroom, New Yorker Hotel

Presiding: J. ROBERT CAMERON AND JUSTIN M. ANDREWS, SC.D.

ADVANTAGES AND DISADVANTAGES OF SEPARATE DEPARTMENTS OF INSPECTION SERVICES

Panel Discussion

Participants:
CHARLES L. SENN.
PAUL W. PURDOM.
WILLIAM H. CARY, JR., C.E.

General Discussion.

EPIDEMIOLOGY, FOOD AND NUTRITION, INDUSTRIAL HYGIENE, AND STATISTICS SECTIONS, AND THE AMERICAN ASSOCIATION OF REGISTRATION EXECUTIVES

Joint Session—Penn Top, Statler Hotel

Presiding: OSWALD K. SAGEN, PH.D.

METHODOLOGY IN CHRONIC DISEASE STUDIES

The Epidemiological Method in Noncommunicable Diseases. ALEXANDER G. GILLIAM, M.D.

Problems in the Use of Mortality Data for Identification of Environmental Cancer Hazards. SIDNEY J. CUTLER.

Relationship of Cancer of the Lung to Air Pollution. JOHN E. SILSON, M.D.

Obesity and Degenerative Heart Disease. ANCEL KEYS, PH.D.

Discussants: (To be announced.)

THURSDAY, 9:30 A.M.

HEALTH OFFICERS, MATERNAL AND CHILD HEALTH, PUBLIC HEALTH EDUCATION, AND PUBLIC HEALTH NURSING SECTIONS, AND THE AMERICAN SCHOOL HEALTH ASSOCIATION

Joint Session—Ballroom, Statler Hotel

Presiding: RUTH E. GROUT, PH.D.

MENTAL HEALTH IN THE HEALTH DEPARTMENT

Psychiatric Theory in Public Health Mental Health Programs. HENRY H. WORK, M.D.

Advice and Reassurance. DAVID M. LEVY, M.D.

Mental Health Nursing Consultation. (Speaker to be announced.)

The Mental Health Program of a City Health Department. BENJAMIN JEFFRIES, M.D.

LABORATORY SECTION

Third Session—Skytop, Statler Hotel

Presiding: CHARLES R. REIN, M.D.

ADVANCES IN THE DIAGNOSIS OF SYPHILIS

A Simple Procedure for the Identification of Biologic False Reactors in Serologic Tests for Syphilis. JOSEPH PORTNOY.

Thirty Years of the Kahn Reaction. ELIZABETH B. MCDERMOTT, PH.D., AND REUBEN L. KAHN, D.SC.

Value of Treponema pallida Immobilization Test in the Diagnosis of Syphilis. CAPTAIN ROGER I. ANDERSON, MSC, USA, JOHN F. KENT, PH.D., ROBERT W. SANDERS, AND JOHN P. DUFFY.

Film Showing: **"*Treponema pallida* Immobilization Test."** RUTH A. BOAK, M.D., AND CHARLES M. CARPENTER, M.D.

OTHER REPORTS

Report of New Laboratory Developments from the Sixth International Congress for Microbiology, Rome, Italy. COLONEL DWIGHT M. KUHNS, MC, USA.

Hemagglutination Studies with Bacteria. ERWIN NETER, M.D.

PROFESSIONAL EXAMINATION SERVICE

First Session—Parlor 2, Statler Hotel

Presiding: CHARLES B. FRASHER.

(Speakers to be announced.)

THURSDAY, 9:30 A.M.

SCHOOL HEALTH SECTION

Third Session—Parlors A, E & H, F and G, New Yorker Hotel

OPEN COMMITTEE MEETINGS

Parlor G — **Committee on Health Service Programs for Secondary Schools.** REGINE K. STIX, M.D., *Chairman.*

Parlor A — **Committee on Research.** HOWARD S. HOYMAN, ED.D., *Chairman.*

Parlors E & H — **Committee on Rural School Health Services.** ARTHUR F. DAVIS, DR. P.H., *Chairman.*

Parlor F — **Committee on Evaluation of School Health Programs.** JESSIE M. BIERMAN, M.D., *Chairman.*

THURSDAY, 12:30 P.M.

INDUSTRIAL HYGIENE SECTION

Luncheon Session—Parlor B, Statler Hotel

Presiding: HERBERT K. ABRAMS, M.D., *Chairman.*

Section Business.

NATIONAL SANITATION FOUNDATION

Luncheon Session—Conference Room 2, Statler Hotel

THURSDAY, 1:30–2:55 P.M.

DENTAL HEALTH, PUBLIC HEALTH EDUCATION, AND SCHOOL HEALTH SECTIONS, AND THE AMERICAN SCHOOL HEALTH ASSOCIATION

Joint Session—Grand Ballroom, New Yorker Hotel

Presiding: THOMAS L. HAGAN, D.D.S.

FLUORIDATION FACTS FOR THE PUBLIC

Fluoridation Facts and How These Facts Were Presented to the Citizens of Baltimore, Maryland. H. BERTON MCCAULEY, D.D.S.

The Waterworks Engineer Looks at Water Fluoridation. DWIGHT F. METZLER, C.E.

The View of the National Congress of Parents and Teachers in Regard to Water Fluoridation. HENRY F. HELMHOLZ, M.D.

Discussion.

THURSDAY, 1:30–2:55 P.M.

ENGINEERING SECTION

Third Session—North Ballroom, New Yorker Hotel

Presiding: ERNEST G. EGGERT.

The Average Cost of Performing Five Common Environmental Operations. LAWRENCE M. FISHER, DR. P.H.

Sanitation Program Planning. WILLIAM C. GIBSON.

Cost Analysis of an Environmental Sanitation Program. CLARENCE W. KLASSEN.

EPIDEMIOLOGY AND LABORATORY SECTIONS

Joint Session—Skytop, Statler Hotel

Presiding: ALEXANDER D. LANGMUIR, M.D.

POLIOMYELITIS

The National Program for the Use of Gamma Globulin in the Prevention of Poliomyelitis. ABRAHAM M. LILIENFELD, M.D.

State Programs for the Use of Gamma Globulin in the Prevention of Poliomyelitis. ROBERT F. KORNS, M.D.

Application of Tissue Culture Methods to Epidemiological Studies in Poliomyelitis. JOSEPH L. MELNICK, PH.D.

FOOD AND NUTRITION SECTION

Second Session—Keystone Room, Statler Hotel

Presiding: FREDERIC W. NORDSIEK, *Chairman.*

VIEWPOINTS ON THE PROBLEMS OF CHEMICALS IN FOODS

The Nutritional Point of View: What Is Expected of Foods. WILLIAM J. DARBY, M.D.

The Views of the Food and Drug Administration: Regulation of Food Additives. CHARLES A. HERRMANN.

The Legal Viewpoint: Present and Recommended Legislation. VINCENT A. KLEINFELD.

The Viewpoint of a Food Manufacturer. ROY C. NEWTON, PH.D.

Laboratory Problems in Establishing the Safety of Food Additives. BERNARD E. OSER, PH.D.

Some New Questions Relating to Chemicals in Foods. FRANKLIN C. BING, PH.D.

THURSDAY, 1:30–2:55 P.M.

LABORATORY SECTION

Fourth Session—Parlors F & G, New Yorker Hotel

Presiding: PEARL L. KENDRICK, SC.D., AND RALPH S. MUCKENFUSS, M.D.

TRENDS IN IMMUNOLOGY

Immune Responses to Diphtheria, Tetanus and Pertussis, Aluminum Phosphate Adsorbed. LOUIS W. SAUER, M.D.

Primary Response of Children to Glycerinated or Dried Smallpox Vaccines of Calf Lymph or Chick Embyro Origin. VICTOR CABASSO, SC.D.

On Hemagglutination Procedures Utilizing Isolated Polysaccharide and Protein Antigens. MAURICE LANDY, PH.D.

Bacteriophage Active Against Virulent M. tuberculosis. SEYMOUR FROMAN, PH.D., AND EMIL BOGEN, M.D.

MATERNAL AND CHILD HEALTH SECTION

Second Session—Parlor 1, Statler Hotel

Presiding: RUTH J. RAATTAMA, M.D., *Chairman.*

The Influence of Birth Weight, Sex, and Plurality on Neonatal Loss in the United States. SAM SHAPIRO.

Is the Premature Baby Worth Saving? V. MARY CROSSE, M.D.

A Fetal Salvage Program. FERDINAND J. SCHOENECK, M.D.

MEDICAL CARE AND PUBLIC HEALTH NURSING SECTIONS, AND THE CONFERENCE FOR HEALTH COUNCIL WORK

Joint Session—Penn Top, Statler Hotel

Presiding: ELIZABETH P. RICE.

NURSING HOMES AND NURSING CARE IN THE HOME

The Characteristics of Patients in Nursing Care Institutions. DEAN W. ROBERTS, M.D.

Public Health Nursing Care of the Sick at Home. EMILIE G. SARGENT, R.N.

Continuity of Nursing Care and Referral Systems. RUTH M. FARRISEY, R.N.

THURSDAY, 2:30 P.M.

STATISTICS SECTION

Field Trip to Headquarters of International Business Machines Company, 590 Madison Avenue, to see a demonstration of their newest and most powerful high-speed electronic calculator, the Electronic Data Processing Machine.

THURSDAY, 3:00 P.M.

SECOND GENERAL SESSION

Ballroom, Statler Hotel

Presiding: WILTON L. HALVERSON, M.D., *President*, American Public Health Association.

(Subject to be announced.) T. DUCKETT JONES, M.D.

Presentation of the Lasker Awards for 1953.

THURSDAY, 5:00 P.M.

ASSOCIATION OF THE ALUMNI OF THE COLUMBIA UNIVERSITY SCHOOL OF PUBLIC HEALTH

Open House, 5:00–6:00 P.M., School of Public Health, 600 West 168th Street, New York City.

All former students are welcome.

THURSDAY, 5:30 P.M.

HARVARD PUBLIC HEALTH ALUMNI ASSOCIATION

Social Hour followed by Dinner at 6:30 P.M.—Skytop, Statler Hotel

LABORATORY SECTION

Social Hour, 5:30–7:30 P.M., Parlor 1, Statler Hotel

THURSDAY, 5:30 P.M.

NATIONAL SANITATION FOUNDATION

Social Hour followed by a Dinner and Evening Session—Conference Room 2, Statler Hotel

UNIVERSITY OF CALIFORNIA PUBLIC HEALTH ALUMNI ASSOCIATION

Social Hour, 5:30–7:30 P.M., Suite 111–112, Statler Hotel

THURSDAY, 6:30 P.M.

AMERICAN SCHOOL HEALTH ASSOCIATION

Dinner Session—North Ballroom, New Yorker Hotel

Presiding: GUY N. MAGNESS, M.D., *President.*

Commemoration of the Twenty-Sixth Anniversary of the A.S.H.A.

Presentation of the William A. Howe Award.

ASSOCIATION OF BUSINESS MANAGEMENT IN PUBLIC HEALTH

Dinner and Evening Session—Panel Room, New Yorker Hotel

MILITARY GOVERNMENT—CIVIL AFFAIRS PUBLIC HEALTH SOCIETY

Dinner Session—Parlor A, Statler Hotel

UNIVERSITY OF PITTSBURGH PUBLIC HEALTH ALUMNI

Dinner Session—Parlor B, Statler Hotel

THURSDAY, 8:00 P.M.

CONFERENCE OF PUBLIC HEALTH VETERINARIANS

Evening Session—Parlor F, New Yorker Hotel

Business Meeting and Reports of Committees.

FRIDAY, 9:30 A.M.

DENTAL HEALTH SECTION

Second Session—Parlor 1, Statler Hotel

Presiding: THOMAS L. HAGAN, D.D.S., *Chairman.*

The Use of Dental Students in a Dental Public Health Program. J. R. ROBINSON, D.D.S.

The Dade County, Florida, Dental Research Program. JAMES L. ARMSTRONG, D.D.S.

Dentistry Contributes to Regional Planning by Sponsoring Its First Public Health Institute in the South. CLIFTON O. DUMMETT, D.D.S.

Supportive Dental Care for Handicapped Children. CHESTER LLOYD, D.M.D.

ENGINEERING AND FOOD AND NUTRITION SECTIONS

Joint Session—North Ballroom, New Yorker Hotel

Presiding: DWIGHT F. METZLER, C.E., AND FREDERIC W. NORDSIEK.

Standardizing Equipment for Food Sanitation. JAMES V. CAWLEY.

Technics Used to Obtain Proper Planning in Food and Food Handler's Sanitation. RUSSELL JACKSON.

Coordinating Unofficial Agency Programs with Public Health Official Programs in Food Sanitation. JAMES A. KING, JR.

Use of the Laboratory in the Investigations of Food Infections and Food Intoxications in Food Sanitation. HENRY E. DRUMWRIGHT.

Use of the Membrane Filter in Food and Milk Sanitation. (Speaker to be announced.)

ENGINEERING, MATERNAL AND CHILD HEALTH, AND PUBLIC HEALTH EDUCATION SECTIONS, AND THE CONFERENCE FOR HEALTH COUNCIL WORK

Joint Session—Penn Top, Statler Hotel

Presiding: RUTH E. GROUT, PH.D.

HUMAN RELATIONS IN PUBLIC HEALTH—AN APPROACH TO COMMUNITY ACTION

(Speakers to be announced.)

FRIDAY, 9:30 A.M.

EPIDEMIOLOGY AND LABORATORY SECTIONS

Joint Session—Skytop, Statler Hotel

Presiding: ESMOND R. LONG, M.D.

PRESENT STATUS OF RESEARCH ON TUBERCULOSIS

Present Status of Immunization in Tuberculosis. B. J. OLSON, M.D.

Early Ambulatory Treatment of Pulmonary Tuberculosis with Isoniazid. MERLE BUNDY, M.D.

Laboratory Aspects of Tuberculosis in the Ambulatory Patient. DANIEL WIDELOCK, PH.D.

Relation Between BCG Allergy and Immunity in Guinea Pigs. SHIRLEY FEREBEE.

The Comparison of Some Tuberculins in BCG Vaccinated and Unvaccinated Persons. JOSEPH D. ARONSON, M.D., HELEN C. TAYLOR, R.N., AND MARIE T. MCGETTIGAN, R.N.

Relationship of Virulence in Guinea Pigs and Isoniazid Resistance of M. tuberculosis Isolated from Clinical Material. LENORE R. PEIZER.

HEALTH OFFICERS, INDUSTRIAL HYGIENE, AND PUBLIC HEALTH NURSING SECTIONS, AND THE AMERICAN SCHOOL HEALTH ASSOCIATION

Joint Session—Ballroom, Statler Hotel

Presiding: JOHN D. PORTERFIELD, M.D.

PULLING TOGETHER FOR COMMUNITY HEALTH

Sharing the Community Job of Public Health Nursing. Experience from the Columbus, Ohio, Nursing Agency. MABEL GROVER, R.N.

Sharing the Community Job of Industrial Health.
Experience from New Jersey. MIRIAM SACHS, M.D.
Experience from the Jefferson County, Alabama, Industrial Health Council. GEORGE A. DENISON, M.D.

MEDICAL CARE SECTION

Third Session—Keystone Room, Statler Hotel

Presiding: S. J. AXELROD, M.D., *Secretary.*

Medical Care Programs for the Needy in Canada. MALCOLM G. TAYLOR, PH.D.

Organization and Development of a Comprehensive Care Program. GEORGE G. READER, M.D.

The Family Health Maintenance Demonstration. GEORGE A. SILVER, M.D.

FRIDAY, 9:30 A.M.

SCHOOL HEALTH SECTION

Fourth Session—Grand Ballroom, New Yorker Hotel

Presiding: ELIZABETH S. AVERY, PH.D., *Chairman.*

A Progress Report on School Health Services in Three Georgia Counties. JAMES R. THOMAS, M.D., AND GUY V. RICE, M.D.

Departments of Education and Public Health Working Together for School Health. FELIX J. UNDERWOOD, M.D.

The Revised "School Health Services."

Discussants:
G. E. RAST.
THOMAS E. SHAFFER, M.D.

Evaluation of Methods of Screening for Hearing Loss. ALFRED YANKAUER, JR., M.D.

STATISTICS SECTION

First Session—Parlor 2, Statler Hotel

Presiding: OSWALD K. SAGEN, PH.D., *Chairman.*

DESIGN OF SURVEYS

(Speakers to be announced.)

FRIDAY, 12:30 P.M.

MEETING OF ALL SECTION COUNCILS WITH THE EDITORIAL BOARD

Luncheon Session—Skytop, Statler Hotel

FRIDAY, 2:30 P.M.

SECOND SPECIAL SESSION

Ballroom, Statler Hotel

PUBLIC HEALTH—PRODUCT OF COMMUNITY ACTION

SETTING OUR SIGHTS FOR THE YEAR AHEAD

Panel Review of the 81st Annual Meeting

Moderator: REGINALD M. ATWATER, M.D.

Participants:

HAROLD M. ERICKSON, M.D.
EARL LOMON KOOS, PH.D.
SEWALL O. MILLIKEN.
JOHN D. PORTERFIELD, M.D.
RICHARD W. POSTON.
GEORGE ROSEN, M.D.
SAMUEL M. WISHIK, M.D.
(Other participants to be announced.)

MEETINGS OF THE SECTION COUNCILS

Some of the Sections have scheduled meetings of their Councils at announced hours and in announced places. Others will depend upon getting their Councils together on an informal basis whenever the opportunity presents itself.

Scheduled Section Council meetings are as follows:

Epidemiology:	Tuesday, 5:30 P.M., Dr. Phair's room, Statler
Food and Nutrition:	Tuesday, 8:00 P.M., Conference Room 7, Statler
	Thursday, 6:00 P.M., Conference Room 7, Statler
Health Officers:	Monday, 8:00 P.M., Suite of Association of State and Territorial Health Officers, Statler
	Tuesday, 12:30 P.M., Room 127, Statler
	Tuesday, 4:30 P.M., Penn Top, Statler (at the close of the first session of the Section)
Industrial Hygiene:	Tuesday, 4:30 P.M., Panel Room, New Yorker (at the close of the second session of the Section)
Laboratory:	Tuesday, 4:30 P.M., Skytop, Statler (at the close of the first session of the Section)
Public Health Education:	Sunday, 4:00 P.M., Conference Room 7, Statler
	Sunday, 7:00 P.M., Conference Room 7, Statler
Statistics:	Monday, 7:00 P.M., Room 127, Statler
	Tuesday, 4:30 P.M., Parlor 2, Statler (at the close of the joint session with Biometrics Society)
	Wednesday, 4:30 P.M., Ballroom, Statler (at close of the joint session with Dental Health and School Health Sections)

Council members of other Sections are urged to call their Section Secretaries in their rooms at the Statler Hotel with regard to time and place of meetings.

NOMINATIONS FOR SECTION OFFICES

Following are lists of nominations for certain Sections that were submitted by the Section Nominating Committees in time for publication in the September *Journal*. All nominees are Fellows of the respective Sections as required in the Constitution and By-laws of the Association. The terms of office are for one year unless otherwise stated.

The By-laws provide that "if the name of any Fellow be transmitted to the Nominating Committee over the signature of ten Fellows of the Section prior to the second meeting of the Section, the Nominating Committee shall add the name of such Fellow to its own list of nominees." The second meeting referred to will be the second meeting of the Section at the forthcoming Annual Meeting. Fellows who wish to add names by petition should communicate with the Section Secretary whose name and address are also shown.

ENGINEERING SECTION NOMINATIONS

Chairman:	DWIGHT F. METZLER, C.E., Lawrence, Kans.
Vice-Chairman:	WALTER S. MANGOLD, Berkeley, Calif.
Secretary:	EARLE W. SUDDERTH, Dallas, Tex.
Member of Section Council,	
5-year term:	ALBERT E. BERRY, PH.D., Toronto, Ont.
2-year term:	JAMES A. KING, JR., Ann Arbor, Mich.
Member of Association Nominating Committee for Elective Councilors:	JUSTIN M. ANDREWS, SC.D., Washington, D. C.

(The present Section Secretary is Earle W. Sudderth, 4815 Ross Ave., Dallas, Tex.)

HEALTH OFFICERS SECTION NOMINATIONS

Chairman:	ROGER F. SONDAG, M.D., Murphysboro, Ill.
Vice-Chairman:	J. W. R. NORTON, M.D., Raleigh, N. C.
Secretary:	DANIEL BERGSMA, M.D., Trenton, N. J.
Member of Section Council,	
5-year term:	JOHN D. PORTERFIELD, M.D., Columbus. Ohio
Member of Association Nominating Committee for Elective Councilors:	JOHN K. ALTLAND, M.D., Lansing, Mich.
Member of Association Standing Committee on Eligibility, 2-year term:	HARALD M. GRANING, M.D., Chicago, Ill.
Member of Association Standing Committee on Administrative Practice, 3-year term:	T. PAUL HANEY, M.D., Tulsa, Okla.

(The present Section Secretary is Daniel Bergsma, M.D., State Department of Health, Trenton, N. J.)

LABORATORY SECTION NOMINATIONS

Chairman:	MYRTLE GREENFIELD, Albuquerque, N. M.
Vice-Chairman:	S. EDWARD SULKIN, PH.D., Dallas, Tex.
Secretary:	COL. DWIGHT M. KUHNS, M.C., Washington, D.C.
Member of Section Council,	
5-year term:	ALBERT H. HARRIS, M.D., Albany, N. Y.
Member of Association Nominating Committee for Elective Councilors:	DONALD T. FRASER, M.B., Toronto, Ont.

(The present Section Secretary is Col. Dwight M. Kuhns, M.C., Room 2836, Main Navy Bldg., Washington, D. C.)

MATERNAL AND CHILD HEALTH SECTION NOMINATIONS

Chairman:	EDWARD DAVENS, M.D., Baltimore, Md.
Vice-Chairman:	ALICE D. CHENOWETH-PATE, M.D., Washington, D. C.
Secretary:	ALFRED YANKAUER, JR., M.D., Albany, N. Y.
Member of Section Council, 5-year term:	VIOLA RUSSELL, M.D., South Burlington, Vt.
Member of Association Nominating Committee for Elective Councilors:	GUY V. RICE, M.D., Atlanta, Ga.
Member of Association Standing Committee on Eligibility, 2-year term:	HERBERT R. KOBES, M.D., Springfield, Ill.

(The present Section Secretary is Samuel M. Wishik, M.D., Graduate School of Public Health, University of Pittsburgh, Pittsburgh 13, Pa.)

MEDICAL CARE SECTION NOMINATIONS

Chairman:	FRANZ GOLDMANN, M.D., Boston, Mass.
Vice-Chairman:	PAUL LEMBCKE, M.D. Baltimore, Md.
Secretary:	S. J. AXELROD, M.D., Ann Arbor, Mich.
Member of Section Council, 5-year term:	HENRY B. MAKOVER, M.D., New York, N. Y.
Member of Association Nominating Committee for Elective Councilors:	MARGARET C. KLEM, Washington, D. C.

(The present Section Secretary is S. J. Axelrod, M.D., School of Public Health, University of Michigan, Ann Arbor, Mich.)

PUBLIC HEALTH NURSING SECTION NOMINATIONS

Chairman:	THEODORA A. FLOYD, R.N., Atlanta, Ga. PATRICIA WALSH, R.N., Ann Arbor, Mich.
Vice-Chairman:	EDNA J. BRANDT, Seattle, Wash. IRENE M. DONOVAN, R.N., St. Paul, Minn.
Secretary:	HELEN L. FISK, R.N., Baltimore, Md.

(The present Section Secretary is Mary C. Connor, Department of Public Health Nursing, Boston University, Boston 15, Mass.)

SCHOOL HEALTH SECTION NOMINATIONS

Chairman:	ELIZABETH S. AVERY, PH.D., Washington, D. C. THOMAS E. SHAFFER, M.D., Columbus, Ohio
Vice-Chairman:	CHARLES C. WILSON, M.D., New Haven, Conn. CHARLES F. GOOD, M.D., Cleveland, Ohio
Secretary:	FRANKLIN M. FOOTE, M.D., New York, N. Y.
Member of Section Council, 5-year term:	ROSS L. ALLEN, DR.P.H., Cortland, N. Y. JOHN H. SHAW, ED.D., Syracuse, N. Y.
Member of Association Nominating Committee for Elective Councilors:	ARTHUR F. DAVIS, DR.P.H., State College, Pa. C. MORLEY SELLERY, M.D., Los Angeles, Calif.
Member of Association Standing Committee on Eligibility, 2-year term:	JESSIE M. BIERMAN, M.D., Berkeley, Calif. EDWARD B. JOHNS, ED.D., Los Angeles, Calif.

(The present Section Secretary is Franklin M. Foote, M.D., National Society for the Prevention of Blindness, 1790 Broadway, New York 19, N. Y.)

STATISTICS SECTION NOMINATIONS

Chairman:	ALAN E. TRELOAR, PH.D., Minneapolis, Minn. JANE WORCESTER, DR.P.H., Boston, Mass.
Vice-Chairman:	CARL L. ERHARDT, New York, N. Y. MORTIMER SPIEGELMAN, M.B.A., New York, N. Y.
Secretary:	WILLIAM M. HAENSZEL, M.A., Bethesda, Md.
Member of Section Council, 5-year term:	HENRY G. PAGE, M.P.H., Ottawa, Ont. A. HARDISTY SELLERS, M.D., Toronto, Ont.
Member of Association Nominating Committee for Elective Councilors:	ALBERT E. BAILEY, PH.D., Harrisburg, Pa. BERNARD G. GREENBERG, PH.D., Chapel Hill, N. C.
Member of Association Standing Committee on Eligibility, 2-year term:	ELLIOTT H. PENNELL, Bethesda, Md.

(The present Section Secretary is William M. Haenszel, Room 2203, Bldg. T-6, National Cancer Institute, Bethesda 14, Md.)

ASSOCIATION NEWS

EIGHTY-FIRST ANNUAL MEETING
AMERICAN PUBLIC HEALTH ASSOCIATION
NEW YORK, N. Y., NOVEMBER 9–13, 1953

APPLICANTS FOR FELLOWSHIP

In accordance with the By-laws of the Association, the names of applicants for Fellowship are officially published herewith. They have requested affiliation with the Sections indicated. Official action by the various Section Councils, the Executive Board (acting on unaffiliated applications), the Committee on Eligibility, and the Governing Council will take place during the New York Annual Meeting.

Health Officers Section

George Adams, M.D., M.P.H., Senior Surgeon, Div. of International Health, Public Health Service, Washington, D. C.

Melville J. Aston, M.D., Director, Div. of Health Center Administration, City Dept. of Public Health, Philadelphia, Pa.

Garry G. Bassett, M.D., Commissioner of Health, Lakewood, Ohio.

Marcolino G. Candau, M.D., M.P.H., Director General, World Health Organization, Geneva, Switzerland

Edward W. Colby, M.D., M.P.H., City Health Director, Portland, Maine

Ernest A. Cook, M.D., Director, Fayette County Health Dept., Fayetteville, W. Va.

Henry Eisenberg, M.D., Venereal Disease Control Officer and Medical Officer in Charge, Prevention and Control Center, Div. of Health, St. Louis, Mo.

George R. F. Elliot, M.D.C.M., D.P.H., Asst. Provincial Health Officer, Provincial Dept. of Health, Vancouver, B. C., Canada

Elizabeth P. Fleming, M.D., M.P.H., Director, Choctaw-McCurtain-Atoka County Health Dept., Hugo, Okla.

John T. Gentry, M.D., M.P.H., Health Officer, Greater Anchorage Health Dist., Anchorage, Alaska

Henry W. Kassel, M.D., Chief of Medical Programs, Regional Office, Public Health Service, Denver, Colo.

Charles S. McCammon, M.D., M.P.H., Surgeon, Public Health Service, State Board of Health, Jackson, Miss.

Leonard Parente, M.D., M.P.H., Health Officer, Health Dept., Hamden, Conn.

Frank L. Roberts, M.D., Dr.P.H., Assoc. Dean, College of Medicine, Univ. of Tennessee, Memphis, Tenn.

Brooks Ryder, M.D., M.P.H., Health Commissioner, Health Dept., Quincy, Mass.

Adele C. Shepard, M.D., M.P.H., Chief, Bureau of Venereal Disease Control, State Dept. of Health, Trenton, N. J.

Vergil N. Slee, M.D., M.P.H., Director, Barry County Health Center, Hastings, Mich.

Joseph N. Togba, M.D., M.P.H., Director of Public Health and Sanitation, Liberian Government, Monrovia, Liberia

Brig. Gen. Edward J. Tracy, M.C. (M.D.), Air Surgeon, Wright-Patterson Air Force Base, Ohio

James L. Wardlaw, Jr., M.D., M.P.H., Director, Field Advisory Staff, State Board of Health, Jacksonville, Fla.

James H. White, M.D., Director, Weld County Health Dept., Greeley, Colo.

Laboratory Section

Jeannette Burchard, M.P.H., Director, Southwest Branch Laboratory, Div. of Health of Missouri, Springfield, Mo.

William A. Dorsey, A.B., Chief, Bureau of Laboratories, Dept. of Public Health, Richmond, Va.

Vernon D. Foltz, M.S., Acting Head of Bacteriology, Kansas State College, Manhattan, Kans.

George T. Lewis, Ph.D., Chairman, Dept. of Biochemistry, School of Medicine, Univ. of Miami, Coral Gables, Fla.

Joseph C. McCaffrey, M.S.P.H., Chief, Bureau of Sanitary Bacteriology, Div. of Labora-

tories, State Dept. of Public Health, Chicago, Ill.

John K. Miller, M.D., M.A., Assoc. Director, Div. of Laboratories and Research, State Dept. of Health, Albany, N. Y.

Sidney Olansky, M.D., Director, Venereal Disease Research Laboratory, Public Health Service, Chamblee, Ga.

Statistics Section

Jacob Baar, M.A., Editor, Statistical Bulletin and Manager, Editorial and Public Health Information Section, Metropolitan Life Insurance Company, New York, N. Y.

Lillian Guralnick, M.Sc., Analytical Statistician, National Office of Vital Statistics, Public Health Service, Washington, D. C.

Louis P. Hellman, A.M., Asst. Director, Medical Statistics Div., Bureau of Medicine and Surgery, Navy Dept., Washington, D. C.

Jacob E. Lieberman, B.S., Statistician, National Institutes of Health, Bethesda, Md.

Anthony M. Lowell, M.P.H., Director, Statistical Div., New York Tuberculosis and Health Assn., New York, N. Y.

Felix E. Moore, B. A., Chief, Biometrics Research, National Heart Institute, Bethesda, Md.

Jules V. Quint, B.S., Supervisor, Occupational Ratings and Accident Statistics, Metropolitan Life Insurance Company, New York, N. Y.

Lt. George L. Saiger, M.C. (M.D., M.P.H.), Biometrician, Army Medical Research Laboratory, Fort Knox, Ky.

Engineering Section

DeWitt S. Abell, M.S.S.E., Sanitary Engineer, Institute of Inter-American Affairs, Montevideo, Uruguay, S. A.

Edmund S. Cary, M.S., C.E., Assoc. Sanitary Engineer, State Dept. of Public Health, Berkeley, Calif.

Harley H. Emmons, M.S., Health Administrator and Chief Sanitarian, Dept. of Health, Milford, Conn.

Edward R. Hermann, S.M., C.E., Chief Sanitary Engineer, U.S. Atomic Energy Commission, Los Alamos, N. M.

Alvin R. Jacobson, Ph.D., Assoc. Professor and Head, Div. of Sanitary Science, School of Public Health, Columbia Univ., New York, N. Y.

Robert W. Lamberton, M.S., Director of Sanitation, Kansas City-Wyandotte County Health Dept., Kansas City, Kans.

Harold L. Malone, B.S., Acting Director, Bureau of Engineering, State Dept. of Health, Oklahoma City, Okla.

William A. McCreery, B.S., Chief Sanitarian (Training), Los Angeles County Health Dept., Los Angeles, Calif.

Loyd F. Pummill, M.P.H., Asst. Sanitary Engineer, State Dept. of Health, Oklahoma City, Okla.

Augustus F. Sweetland, B.S., Public Health Engineer, State Dept. of Public Health, Athens, Ga.

Harold Wainess, M.S., Sanitation Consultant, Harold Wainess and Associates, Chicago, Ill.

John H. Wyma, M.P.H., Public Health Engineer, Ottawa County Health Dept., Grand Haven, Mich.

Industrial Hygiene Section

Frank R. Ferlaino, M.D., M.S., Medical Director, New York Exec. Offices, General Motors Corporation, New York, N. Y.

Sarto R. Plamondon, C.E., M.S., Chief Sanitary Engineer, Div. of Industrial Hygiene, Ministry of Health, Montreal, Que., Canada

Food and Nutrition Section

Gertrude E. Austin, M.S., Director, Consumer Service Div., Sunkist Growers, Los Angeles, Calif.

Frederick C. Baselt, E.E., C.E., Asst. to General Manager, Research and Technical Dept., American Can Company, New York, N. Y.

Mary K. Brown, M.S., Head, Food Service Div., Provisions Supply Office, Bureau of Supplies and Accounts, U. S. Navy, Washington, D. C.

Helen B. Burch, Ph.D., Research Assoc., Pharmacology Dept., Washington Univ., St. Louis, Mo.

Jane C. Ebbs, M.S., Special Feeding and Nutrition Advisor, Office of Quarter Master General, Dept. of the Army, Washington, D. C.

Yaro Ribeiro Gandra, M.D., M.P.H., Acting Head, Dept. of Nutrition, School of Hygiene and Public Health, Univ. of Sao Paulo, Sao Paulo, Brazil, S. A.

Minerva Harbage, M.Sc., Special Nutrition Consultant, State Dept. of Health, Columbus, Ohio.

Paul E. Howe, Ph.D., Nutrition Consultant, Bureau of Animal Industry, U.S. Dept. of Agriculture, Washington, D. C.

Ruth L. Huenemann, M.S., Assoc. Professor of Nutrition, Univ. of Tennessee, Knoxville, Tenn.

James M. Hundley, M.D., Chief, Laboratory of Biochemistry and Nutrition, National Institutes of Health, Bethesda, Md.

Willard A. Krehl, Ph.D., Assoc. Professor of Nutrition, Medical School, Yale Univ., New Haven, Conn.

Dessie Lynn, M.A., Home Economics Teacher, Board of Education, New York, N. Y.

Clare W. Osborn, M.A., Senior Public Health

Nutritionist, State Board of Health, Raleigh, N. C.

Bernard L. Oser, Ph.D., Director, Food Research Laboratories, Inc., Long Island City, N. Y.

Ellen C. Ruthman, A.B., Chief of Emergency Feeding, Federal Civil Defense Administration, Washington, D. C.

Nevin S. Scrimshaw, M.D., Ph.D., Chief, Nutrition Section, Pan-American Sanitary Bureau and Director, Institute of Nutrition of Central America and Panama, Guatemala City, Guatemala, C. A.

Maurice E. Shils, Sc.D., Asst. Professor of Nutrition, School of Public Health, Columbia Univ., New York, N. Y.

Andromache Sismanidis, M.P.H., Nutrition Representative, North American Regional Office, Food and Agriculture Organization of the United Nations, Washington, D. C.

Clara A. Storvick, Ph.D., Professor of Foods and Nutrition, Oregon State College, Corvallis, Ore.

F. Eugenia Whitehead, D.Sc., Director of Nutrition, Research and Education, Wheat Flour Institute, Chicago, Ill.

Maternal and Child Health Section

Stanley C. Best, M.D., M.P.H., Director of Child Health, Provincial Dept. of Public Health, Regina, Sask., Canada

Elinor F. Downs, M.D., M.P.H., Staff Assoc., Committee on Child Health, American Public Health Assn., New York, N. Y.

Ruth H. Goeltz, R.N., M.P.H., Maternal and Child Health Consultant, State Dept. of Health, Harrisburg, Pa.

Margaret A. Losty, B.S., Hospital Nursing Consultant, Bureau for Handicapped Children, Dept. of Health, New York, N. Y.

Lucille J. Marsh, M.D., Chief, Program Planning Branch, Div. of Health Services, U. S. Children's Bureau, Washington, D. C.

Bertrand Primeau, M.D., M.P.H., Supt., Div. of Child Hygiene, Dept. of Health, Montreal, Que., Canada

Elizabeth Kirk Rose, M.D., Chief, Section on Maternal and Child Health, Dept. of Public Health, Philadelphia, Pa.

Public Health Education Section

J. Robert Anderson, M.A., Director, Bureau of Health Education, State Dept. of Health, Richmond, Va.

Franklin K. Brough, M.P.H., M.S., Director of Public Health Education, Wichita-Sedgwick County Dept. of Public Health, Wichita, Kans.

Horace A. Brown, M.P.H., Exec. Director, Connecticut Heart Assn., Inc., Hartford, Conn.

Louise G. Campbell, B.S., Exec. Secy., New York City Hospital Visiting Committee, State Charities Aid Assn., New York, N. Y.

Graydon Dorsch, M.P.H., Exec. Director, Denver Tuberculosis Society, Denver, Colo.

Carl Fox, M.A., Exec. Secy., Georgia Tuberculosis Assn., Atlanta, Ga.

Franklin B. Haar, Ph.D., Professor of Health Education, School of Health and Physical Education, Univ. of Oregon, Eugene, Ore.

Alice I. Porter, M.P.H., Consultant in Case Finding, National Tuberculosis Assn., New York, N. Y.

David S. Ruhe, M.D., M.S., Director, Medical Audio-Visual Institute, Assn. of American Medical Colleges, Chicago, Ill.

Harold Swanberg, M.D., Secy., American Medical Writers' Assn. and Mississippi Valley Medical Society, and Editor, Mississippi Valley Medical Journal, Quincy, Ill.

Stewart C. Thomson, M.D., M.P.H., Professor and Asst. Director, School of Public Health, Univ. of Minnesota, Minneapolis, Minn.

Walter Wenkert, M.P.H., M.S., Exec. Secy., Tuberculosis and Health Assn., New Haven, Conn.

Public Health Nursing Section

Eileen Downey, R.N., M.A., Director of Nursing, Benjamin Franklin Hospital, Columbus, Ohio

Frances E. Hart, M.P.H., Nursing Supervisor, Butler County Health Unit, Butler, Pa.

Anna V. Matz, R.N., M.A., Consultant, Bureau of Public Health Nursing, Dept. of Health, New York, N. Y.

Lucille E. Notter, R.N., M.A., Director of Joint Education Program, Visiting Nurse Service of New York and Visiting Nurse Service of Brooklyn, New York, N. Y.

Epidemiology Section

Robert M. L. Albrecht, M.D., M.P.H., Asst. Director, Bureau of Epidemiology and Communicable Disease Control, State Dept. of Health, Albany, N. Y.

A. Frank Brewer, M.D., C.P.H., Chief, Bureau of Venereal Diseases, State Dept. of Public Health, Berkeley, Calif.

Mary B. Dale, M.D., Dr.P.H., Epidemiologist and Chief, Div. of Communicable Diseases, Los Angeles County Health Dept., Los Angeles, Calif.

Stanley L. Hendricks, D.V.M., M.P.H., Public Health Veterinarian, State Dept. of Health, Des Moines, Iowa

T. William Lester, Jr., M.D., Assoc. Professor, Dept. of Medicine, Univ. of Chicago, Chicago, Ill.

Abraham M. Lilienfeld, M.D., M.P.H., Asst. Professor of Epidemiology, School of Hy-

giene and Public Health, Johns Hopkins Univ., Baltimore, Md.

Clayton G. Loosli, M.D., Ph.D., Professor and Chief, Section of Preventive Medicine, Univ. of Chicago, Chicago, Ill.

Kenneth MacDonald, Ph.D., Assoc. Professor, College of Medicine, State Univ. of Iowa, Iowa City, Iowa

Col. Charles H. Moseley, M.C. (M.D., M.P.H.), Director, Div. of Preventive Medicine, Army Medical Service Graduate School, Washington, D. C.

Lt. Col. Donald S. Myers, M.C. (M.D., M.P.H.), Post Preventive Medicine Officer, U. S. Army Hospital, Fort Dix, N. J.

A. John Nelson, M.B., D.P.H., Director, Div. of Venereal Disease Control and Consultant in Epidemiology, Provincial Dept. of Health and Welfare, Vancouver, B. C., Canada

Natesaier Purshottam, M.B., M.P.H., Instructor in Epidemiology, School of Public Health, Harvard Univ., Boston, Mass.

Col. Frank W. Threadgill, M.C. (M.D., M.P.H.), Surgeon, Western Area Command, Germany, APO, New York, N. Y.

Herbert A. Wenner, M.D., Research Professor of Pediatrics, Univ. of Kansas, Kansas City, Kans.

School Health Section

Ruth Abernathy, Ph.D., Assoc. Professor of Physical Education, Univ. of California, Los Angeles, Calif.

Allan R. Cunningham, M.D., Chief, Section of School Health, State Dept. of Public Health, Boston, Mass.

Lillian B. Davis, Sc.D., Supervisor of Health Education, Dept. of Education, Baltimore, Md.

Leslie W. Irwin, Ph.D., Professor of Health Education, Boston Univ., Boston, Mass.

Marian V. Miller, M.A. in Ed., Health Educator, National Foundation for Infantile Paralysis, Inc., New York, N. Y.

Elena M. Sliepcevich, M.A. in Ed., Assoc. Professor in Health Education and Director of Audio-Visual Education, Springfield College, Springfield, Mass.

Wesley M. Staton, Ed.D., Assoc. Professor and Chairman, College Research Council, College of Physical Education and Health, University of Florida, Gainesville, Fla.

Marie Swanson, R.N., M.A., Asst. Director, National League for Nursing, and Consultant in Nursing, Professional Examination Service, American Public Health Assn., New York, N. Y.

Dental Health Section

Byron W. Bailey, D.D.S., Dental Member, Vermont State Health Commission, and Member, Board of Directors, School of Dental Hygiene, Univ. of Vermont, Hanover, N. H.

Harry W. Bruce, Jr., D.D.S., M.P.H., Dentist, Chattanooga-Hamilton County Health Dept., Chattanooga, Tenn.

E. Taylor Dykes, D.D.S., Public Health Dental Officer, State Dept. of Public Health, Los Angeles, Calif.

Sidney B. Finn, D.M.D., M.S., Professor of Dentistry, School of Dentistry, Univ. of Alabama, Birmingham, Ala.

Leslie W. Foster, D.D.S., M.Sc., Dental Officer, Talihina Medical Center, Bureau of Indian Affairs, Talihina, Okla.

Donald J. Galagan, D.D.S., M.P.H., Regional Dental Consultant, Region X, Public Health Service, San Francisco, Calif.

Francisca Guerra-Alvarez, D.D.S., M.P.H., Chief, Bureau of Oral Hygiene, Dept. of Health, Santurce, P. R.

Demetrios M. Hadjimarkos, D.D.S., M.P.H., Asst. Professor of Public Health, Dental School, Univ. of Oregon, Portland, Ore.

Major Howard C. Largeman, D.C. (D.M.D.), Administrator and Prosthodontist, Central Dental Laboratory, 2nd Medical Detachment (Bremerhaven, Germany), APO, New York, N. Y.

W. Philip Phair, D.D.S., M.P.H., Asst. Secy., Council on Dental Health, American Dental Assn., Chicago, Ill.

Omar M. Seifert, D.D.S., M.P.H., Director, Div. of Dental Health, State Dept. of Health, Reno, Nev.

Roy D. Smiley, D D.S., Director, Dental Div., State Board of Health, Indianapolis, Ind.

Doyle J. Smith, D.D.S., Orthodontics Practice, Memphis, Tenn.

Esther M. Wilkins, D.M.D., Director of Dental Hygienists and Asst. Professor, Univ. of Washington, Seattle, Wash.

Mabel F. Wood, D.D.S., Private Practice and Dental Director, Orleans Parish School Board, New Orleans, La.

Medical Care Section

Gertrude L. Anderson, M.P.H., Supervisory Interne, Visiting Nurse Service of New York, New York, N. Y.

Otis L. Anderson, M.D., Asst. Surgeon General; Chief, Bureau of State Services, Public Health Service, Washington, D. C.

Agnes W. Brewster, A.B., Medical Economist, Div. of Research and Statistics, Social Security Administration, Washington, D. C.

Zdenka Buben, M.A., Director, Bureau of Medical Social Service, Los Angeles County Health Dept., Los Angeles, Calif.

Duncan W. Clark, M.D., Professor and Exec. Officer, Dept. of Environmental Medicine and

Community Health, College of Medicine, State Univ. of New York, Brooklyn, N. Y.

Henry I. Fineberg, M.D., Medical Supt., Queens Hospital Center, Jamaica, N. Y.

Sigmund L. Friedman, M.D., Director, Div. of Professional and Administrative Practices, Health Insurance Plan of Greater New York, New York, N. Y.

Sam O. Gilmer, Jr., B.S., Chief Hospital Consultant, Public Health Service, Washington, D. C.

Gordon H. Hatcher, M.D., M.P.H., Asst. Professor, Dept. of Public Health Administration, School of Hygiene, University of Toronto, Toronto, Ont., Canada

Vane M. Hoge, M.D., M.B.A., Asst. Surgeon General, Public Health Service, Washington, D. C.

Mohamed Iliyas, M.B., M.P.H., Health Officer, Central Government Health Organization, Karachi, Pakistan

Walter J. Lear, M.D., Assoc. Medical Director, Health Insurance Plan of Greater New York, New York, N. Y.

Sidney S. Lee, M.D., Dr.P.H., Venereal Disease Control Officer, State Health Dept., Columbus, Ohio

John O. McNeel, M.D., Medical Director, St. Louis Labor Health Institute, St. Louis, Mo.

Glyn W. Myers, Exec. Director, Saskatchewan Hospital Services Plan, Regina, Sask., Canada

Joseph P. Peters, M.S., Hospital Consultant, Div. of Medical and Hospital Resources, Public Health Service, Washington, D. C.

George O. Whitecotton, M.D., Medical Director, Alameda County Institutions, Oakland, Calif.

Unaffiliated

Albert J. Beckmann, M.D., M.S.P.H., Research Assoc. in Sanitary Science, School of Public Health, Columbia Univ., New York, N. Y.

Athemas Bellerive, M.D., Director-General of Health, Port-au-Prince, Haiti

Murray C. Brown, M.D., Chief, Clinical and Professional Education, The Clinical Center, National Institutes of Health, Bethesda, Md.

Gerald R. Clark, M.D., M.P.H., Director, State Dept. of Public Health, Santa Fe, N. M.

Sidney B. Clark, M.D., M.P.H., Chief, Field Office, Pan American Sanitary Bureau, El Paso, Tex.

Philip K. Condit, M.D., M.P.H., Medical Officer, Bureau of Venereal Diseases, State Dept. of Public Health, Berkeley, Calif.

William P. Forrest, M.D., D.P.H., Special Asst. to Director-General and Medical Director, World Health Organization, Geneva, Switzerland

Beulah S. O. France, R.N., Editorial Director, American Baby Magazine, and Writer, "Child Care," daily newspaper column, New York, N. Y.

Isaak Gratch, M.D., Medical Supervisor, Rosebank Substation and Research Laboratory, U. S. Quarantine Station, Rosebank, Staten Island, N. Y.

Ruth B. Howard, M.D., M.P.H., Chief, Hospital Consultation and Standards, State Dept. of Public Health, Denver, Colo.

Lois M. Jund, M.P.H., Public Health Administrative Director, Alaska Dept. of Health, Juneau, Alaska

Maurice Kamp, M.D., M.P.H., Senior Surgeon, Public Health Service, Health Dept., Chicago, Ill.

Gladys A. Lee Kimble, M.A., Director, Dept. of Public Health Services, Englewood Hospital Assn., Englewood, N. J.

Lee Meyerson, Ph.D., Asst. Professor, Univ. of Kansas, Lawrence, Kans.

Gustavo G. Molina, M.D., M.P.H., Chief, Professional Education Branch, Pan American Sanitary Bureau, Washington, D. C.

William A. Prowse, M.D., C.M., D.P.H., Chief, Civil Aviation Medicine Div., Dept. of National Health and Welfare, Ottawa, Ont., Canada

Fred B. Ragland, B.S., Director, Bureau of Finance and Accounts, State Board of Health, Jacksonville, Fla.

Ernest R. Raphael, M.D., Medical Advisor for Morocco, American Joint Distribution Committee, Casablanca, Morocco

Guillermo E. Samame, M.D., M.P.H., Zone Representative in Charge, Zone II, Pan American Sanitary Bureau, Mexico City, Mex.

Dorothy F. Schober, M.P.H., Program Consultant, American Heart Assn., New York, N. Y.

Brig. Gen. Otis B. Schreuder, M.C., USAF (M.D.), Air Surgeon, Wright-Patterson Air Force Base, Ohio

Grace B. Taranto, B.A., Chief, Office of Program Aids, Region VI, Public Health Service, Atlanta, Ga.

James A. Taylor, M.D., D.P.H., Deputy Provincial Health Officer, Provincial Dept. of Health, Victoria, B. C., Canada

Jaime M. Vidal-Feliz, M.D., Acting Director and Resident Physician, Aibonito Tuberculosis Hospital, and Consulting Physician, Cayey Tuberculosis Center, Cayey, P. R.

Winston W. Yung, M.D., M.P.H., Director, Epidemiological Intelligence Station, World Health Organization, Singapore

APHA NEW MEMBERS

In July, 89 persons applied for membership in the American Public Health Association. Of these, 53 were men and 36 women. Their ages ranged from 21 to 76 years, with one applicant reporting a birth date of April 24, 1953. While this may be a typographical error, we like to believe that this new member is an offspring of the lady who gave up her membership reluctantly some years ago to raise a family, and promised that all her children would become members of the APHA.

A list of July applicants, including the one possibly enrolled at birth, will be sent to any member upon request.

NEWS OF APHA AFFILIATED SOCIETIES

Michigan

The Michigan Public Health Association held its Thirty-fourth Annual Meeting in Grand Rapids, May 20–22. This meeting was a part of the Thirty-second Annual Michigan Public Health Conference, the theme of which was "Family Health." Other organizations participating in the conference were the Michigan Association of Public Health Dentists and Dental Hygienists, the Michigan Health Officers Association, and the Michigan School Health Association.

The new officers of the Michigan Public Health Association are:

President—Fred Wertheimer, D.D.S., chief, Public Health Dentistry Section, State Department of Health, Lansing

Vice-President—Morton S. Hilbert, director, Bureau of Engineering, Wayne County Health Department, Eloise

Secretary-Treasurer—LaRue L. Miller, chief, Section of Environmental Sanitation, State Department of Health, Lansing

West Virginia

The Twenty-eighth Annual Meeting of the West Virginia Public Health Association was held in Charleston, May 7–8. A preconference Health Education Workshop sponsored by the State Department of Health took place on May 6. The themes of the two General Sessions were: "What Problems Face the Aging in the Fields of Health and Welfare?" and "How to Meet the Problems of the Aging."

Officers were elected as follows to serve for the coming year:

President—J. J. Lawless, M.D., Morgantown

1st Vice-President—Isabelle Rassel, Parkersburg

2nd Vice-President—Thomas Deveny, Jr., Charleston

Treasurer—Rachel Ferguson, Charleston

APHA membership application blank on page LIII

HOTEL RATES

81st Annual Meeting

New York, N. Y., November 9–13, 1953

The form below is for your convenience in making hotel reservations. Please mail directly to the hotel of your choice. Those listed are West Side hotels holding rooms for Association delegates. The Statler and New Yorker are headquarters.

Hotel	*Address*	*Single*	*Double*	*Twin-Bedded*
Governor Clinton	7th Avenue & 31 Street	$5.50– 7.00	$7.50–10.00	$9.50–12.00
Henry Hudson	353 West 57 Street	4.00– 6.00	7.00–11.00	8.00–12.00
McAlpin	Broadway & 34 Street	5.00– 9.00	8.00–13.00	9.00–13.00
New Yorker	8th Avenue & 34 Street	5.00– 9.00	8.50–15.00	9.50–16.00
Statler	7th Avenue & 32 Street	5.50–10.00	8.50–12.00	9.50–17.00
Taft	7th Avenue & 50 Street	5.00– 7.75	9.75–10.75	10.50–11.50

Rates subject to 5% New York City Occupancy Tax

HOTEL RESERVATION FORM

AMERICAN PUBLIC HEALTH ASSOCIATION

81st Annual Meeting and Meetings of Related Organizations

November 9–13, 1953

PLEASE RESERVE:

Single Room with Bath at $..... per day

Double Room with Bath at $..... per day

Twin-bedded Room with Bath at $..... per day

Arrival: November ..... Hour ..... Departing: November ..... Hour .....

NAMES OF ALL OCCUPANTS: *ADDRESSES:*

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MAIL CONFIRMATION TO: Signed: .....

Address: .....
City Zone State

MAIL THE FORM TO THE HOTEL OF YOUR CHOICE

EMPLOYMENT SERVICE

The following pages present information for those seeking qualified public health personnel and for those seeking positions in public health.

This is a service of the Association conducted without expense to the employer or employee.

POSITIONS AVAILABLE

Medical Health Officer—for an established county health department. 37,000 population; northwestern Illinois. $7,200–$9,000, plus travel allowance. Qualified physician may start above the minimum. President, Lee County Board of Health, 123 E. First St., Dixon, Ill.

Health Officer—City of Waterbury, Conn. Must have degree and experience in public health administration and be eligible for Connecticut licensure. Generalized active program; excellent community relations. Board of Health, Waterbury, Conn.

Health Officer—for newly established bicounty health department in Upper Peninsula of Michigan. Combined population approximately 41,860, salary open. Physician with public health training and experience preferred. William Gray, Chairman, Dickinson-Iron County Board of Health, Iron Mountain, Mich.

District Health Officer—Qualifications: M.D. from recognized school, completion of satisfactory internship, Kansas license or eligibility for one, M.P.H. degree, three or more years of satisfactory full-time experience in full-time health department. $714–$910 per month. May start above minimum, depending on qualifications and experience. State Civil Service position. Travel and subsistence allowance. Administration of program of district. Opportunity for individual initiative and advancement. **Health Officer**—Established city-county health department. $647–$827 per month, plus travel allowance. Qualified physicians may start above minimum. Thomas R. Hood, M.D., Executive Secretary, Kansas State Board of Health, Topeka, Kans.

Physician—as assistant medical director. Assistant head of a division of 50 persons engaged in various medical quality control activities. Age limit 40. Beginning salary $7,500–$10,000. Otis Brown, Personnel Manager, Cutter Laboratories, 4th and Parker Sts., Berkeley 10, Calif.

Physicians—with public health outlook, for medical service, Trust Territory of the Pacific Islands (geographical area of Micronesia). Federal Civil Service appointment without competitive examination. $8,800. Director of Public Health, Trust Territory of the Pacific Islands, 3845 Kilauea Ave., Honolulu 16, Hawaii.

Public Health Physician—Three openings for experienced public health physicians. $11,000 per annum. Bruce Underwood, M.D., Commissioner of Health, Kentucky State Dept. of Health, 620 S. Third St., Louisville 2, Ky.

Health Program Specialist—to assist chief, Section of Maternal and Child Health and Crippled Children's Services. Applicant must have equivalent of master of public health degree and at least one year paid employment in public health or related program. Additional year's qualified experience may be substituted for graduate study. Starting salary $5,640, with opportunity for advancement. Personnel Officer, Alaska Dept. of Health, Alaska Office Bldg., Fourth and Main Sts., Juneau, Alaska.

Public Health Dentist—Michigan licensed or Board qualified dentists. Duties are clinical and educational. Must be draft exempt and under 40 years of age. Child Health Division, Children's Fund of Michigan, 660 Frederick St., Detroit 2, Mich.

Sanitary Engineer—for public health program. College degree in sanitary or civil engineering. Position covered by merit system. Salary dependent on training and experience. Box 391, Dover, Del.

Public Health Engineer—Suburban population 200,000; 8 sanitarians; will be promoter, consultant, administrator, and will make detailed engineering reports. $7,000–$8,000; allowance for use of own car. E. L. Sederlin, M.D., Director, DuPage County Health Dept., Villa Park, Ill.

Health Educators—Two state level and one local positions open. M.P.H. in health education supplemented by at least one year's experience. Starting salary open, depending on qualifications. A. T. Johnson, Personnel Director, Oregon State Board of Health, P. O. Box 231, Portland 7, Ore.

Physical Therapists—for physically handicapped children. Work with the California Department of Public Health in cities where public schools have facilities to handle cerebral-palsied children. Requirements: One year of physical therapy experience, plus graduation from physical therapy school. $341–$415 month. Take examination in your own state in November. File applications now. Dept. P10, State Personnel Board, 1015 L St., Sacramento, Calif.

Certified Public Health Nurse—for generalized program in a county of 37,000; 100 miles west of Chicago. Car essential. $235–$300 with travel allowance of $65 per month. Three weeks' vacation. President, Lee County Board of Health, 123 E. First St., Dixon, Ill.

Supervising Nurse and Staff Nurses—for county health department. Generalized program. Certified or qualified for certification in Illinois. Supervising nurse —$350–$425, depending on qualifications. Staff nurses $275–$325, depending on experience and training. W. J. Broad, M.D., Director, McLean County Health Dept., 1009 N. Park St., Bloomington, Ill.

Public Health Nurse—must have California Public Health Nurse Certificate, generalized county program, $318–$382 per month, mileage or car furnished. Civil Service Commission, 967 Osos St., San Luis Obispo, Calif.

Staff Nurse—Attractive rural community, annual salary increment. Montgomery County Health Dept., Hillsboro, Ill.

Public Health Nurses—for staff positions in general public health program in industrial city. Near two large university public health nursing teaching centers. Public Health Nurse I—$3,588–$3,900; Public Health Nurse II—$3,978–$4,290. Car furnished. City of Pontiac, Dept. of Public Health, 18 S. Perry St., Pontiac, Mich.

Public Health Nurse—Annual salary $2,712–3,252. Graduation from an accredited school of nursing. Certificate of public health training. Harold Hudgins, Personnel Officer, City of Norfolk, Norfolk, Va.

Public Health Nurses—Two staff nurses and one senior nurse wanted in well organized and established health department for generalized public health program in urban-rural county located on Lake Michigan. Well known summer resort area. Three weeks' vacation. Salary adjusted to qualifications, mileage 7 cents, must own car. Ottawa County Health Dept., Court House, Grand Haven, Mich.

Public Health Nurses—wanted immediately in modern community of 25,000 people in the Pacific Northwest. Community and its public health system operated by General Electric Company for the U. S. Atomic Energy Commission. Climate is sunny and healthful. Starting salary, based on experience and training, up to $360 per month. Apply by air mail letter to Employment Office, General Electric Co., Richland, Wash.

Public Health Nurses—needed for Victorville, ($343); for rural areas near San Bernardino, ($311). Public Health Certificate and car required. County Civil Service Office, 236 Third St., San Bernardino, Calif.

Public Health Nurses—for staff positions in Visiting Nurse Association of Cleveland. One-month vacation. Tuition allowance for part-time study at Western Reserve University. Student program and expectant parents' program with opportunities for teaching. $3,240–$3,870, depending on preparation and experience. **Assistant Director**—Budgeted for 57 positions. Generalized program with large expectant parents' program and large student program. **Educational Director**—$5,500–$6,000, depending on qualifications and experience. Positions available immediately. Miss Cynthia A. Dauch, Director, Visiting Nurse Association, 3300 Chester Ave., Cleveland 14, Ohio.

POSITIONS WANTED

Health Educator—B.S., registered physical therapist, M.P.H., desires position in community organization and public health education with official or voluntary agency. Eight years' experience in veteran and civilian rehabilitation. Box **HE–56**, Employment Service, APHA.

Health Educator—Public Health Nurse, M.A. Experienced in health education, community organization, and administration, seeks opportunity in New York City or vicinity. Box **HE–57**, Employment Service, APHA.

Public Health (Sanitary) Engineer—B.C.E. Five years' experience, including public health engineer at county and state health department levels, and as a sanitary engineer with consulting engineer. Married, veteran. Desires responsible and permanent position. Location Northeast or Midwest. Box **E–24**, Employment Service, APHA.

Health Educator—Male, veteran, B.S., M.P.H. Columbia University. Desires position in public health education. Experience in community, school health, and teaching areas. Box **HE-58**, Employment Service, APHA.

All communications on the following advertisements should be sent to Burneice Larson, Medical Bureau, Palmolive Building, Chicago 11, Ill.

OPPORTUNITIES AVAILABLE

WANTED: (a) Public health physician, preferably Diplomate, to serve as chief of staff, foreign operations, large industrial company. (b) Director, school health, metropolitan health department; pediatric training advantageous. (c) Health commissioner; college town, 70,000; Midwest. (d) Director, visiting nurse program; university city, South; $6,000. (e) School nurse; high school, 1,600 students; Chicago area. (f) Head, university department public health nursing; rank; assistant professor; minimum $6,000. (g) Industrial hygienist, particularly interested chemistry and chemical engineering; one of leading industrial companies. (h) Community counselors, health educators, rehabilitation workers; county and city agencies; East. (i) Sanitary engineer qualified direct department; broad program; minimum $7,000. Burneice Larson, Medical Bureau, Palmolive Building, Chicago.

OPPORTUNITIES WANTED

WANTED: Opportunities (a) Public health physician; M.P.H.; Diplomate; nine years, director, city health department. (b) Public health nursing administrator; M.A.; seven years' administrative and teaching experience. (c) Health educator; M.S., D.P.H.; five years' teaching; seven years educator, state health department. (d) Sanitarian; B.S.; year's graduate training, environmental sanitation; eight years state health department. Burneice Larson, Medical Bureau, Palmolive Building, Chicago.

NEWS FROM THE FIELD

WHO NEWS

The World-Wide Attack on Yaws

The proceedings of the *First International Symposium on Yaws Control,* held in Bangkok in 1952 under WHO auspices, are now available. Included are 18 of the scientific papers given at the conference, together with summaries of some of the discussions. The discussions include the biology of yaws, the role of antibiotics in its treatment, the role of international organizations in assisting governments in yaws control, and the five steps in a control program.

The steps in a control program are outlined as: analysis of the extent and nature of the problem; development of a plan suitable to local conditions; demonstration, survey, and training; expansion of the project into a mass campaign; and finally, consolidation, or the process by which the yaws campaign is integrated into the permanent health structure of the area.

In each of these five steps the WHO has a place, but its greatest usefulness can be in the period of demonstration, survey, and training. The discussions further make clear that WHO's role is that of assistance and stimulation but that governments themselves are ultimately responsible for solving their own problems. "WHO can stimulate; it can assist; it can support; but there can be no substitute for active work by governments, both national and local, towards the solution of their own health problems."

The importance of such a conference is underlined by the fact that the means is now at hand for a significant reduction, if not elimination of the disease. Mass penicillin treatment can reduce materially the incidence of infectious cases, after which they can be kept to a minimum by thorough case-finding and preventive measures.

First International Symposium on Yaws Control. Mixed language edition, English and French, with summaries in each. Monograph series No. 15. Columbia University Press, 2960 Broadway, New York 27; $4.50.

Welfare Measures in 31 Countries

The United Nations' *Biennial Report on Community, Family and Child Welfare 1949 and 1950* continues a series of annual reports in the field of community, family, and child welfare originally published by the League of Nations. The UN Department of Social Affairs published three volumes summarizing developments in child and youth welfare up to 1946, during 1947 and during 1948. These appeared in 1948, 1949, and 1951, respectively. By decision of the Economic and Social Council the series was extended to cover community, family, and child welfare and was changed to a biennial instead of an annual publication. The new volume giving a picture of what has been done in 31 countries is the first of these biennial studies. The series is published mainly to meet the urgent need for international exchange of information and experience in the field of family and child welfare.

Columbia University Press, 2960 Broadway, New York 27; $3.00.

WHO Epidemiological Cable Code

The first cable code to be used on a world-wide scale for transmitting information on epidemics and quarantine measures has been published by WHO. This code supersedes the AA Epidemiological Cable Code in use since 1925 by countries in the Far East and the

Pacific area served by what is now the WHO Epidemiological Intelligence Station at Singapore.

CODEPID, which allows for coding and decoding messages in both English and French, is intended for economical and accurate wire transmission of the epidemiological and quarantine information required by WHO International Sanitary Regulations, as well as for direct exchange of information between governments on health matters. Use of the code, which goes into effect on December 1, 1953, is restricted to national health authorities and WHO offices to insure safe transmission of official information and to prevent it from reaching unauthorized persons.

World Medical Periodicals Listed

WHO has published *World Medical Periodicals* on its own behalf and that of UNESCO. This volume lists 4,000 current medical periodicals published in 94 countries and 32 languages. It has both a subject index and an index by countries of publication. The indexes and the explanatory preface are in English, French, and Spanish. It is the hope that the standard abbreviations of the text will contribute to create uniformity of bibliographical citations in medical literature. It is WHO's further hope that there may be international collaboration in the preparation of regular revisions.

Brucellosis Report Modified

The second report of the *Joint FAO/WHO Expert Committee on Brucellosis* has recently been published. In order to consider the new information concerning the disease, the committee met in Florence, Italy, in October, 1952. Since appreciable advances have been made in the knowledge of the disease in the past two years, the committee reviewed and modified the report of its first session. It further discussed in detail the isolation and identification of Brucella. The second report needs to be used in connection with the first. Each is available from Columbia University Press, 2960 Broadway, New York City; 25¢.

Established during 1950 and 1951, there are now 12 FAO/WHO brucellosis centers for the purpose of forwarding work on brucellosis on an international basis. One is located at the University of Minnesota School of Medicine in Minneapolis under the leadership of W. W. Spink, M.D., director of the Brucellosis Laboratory. He and N. B. McCullough, M.D., chief of the Laboratory of Clinical Investigation, National Microbiological Institute, Public Health Service, are the United States members of the Expert Committee.

WESTERN BRANCH APHA MEETS IN LOS ANGELES

The Twentieth Annual Meeting of the Western Branch, American Public Health Association, was held in Los Angeles, Calif., June 10–13. The Western Venereal Disease Control Seminar of Regions IX and X, U. S. Public Health Service, met jointly with the Venereal Disease Section of the Branch on June 9–10. Nearly 1,350 persons registered for the meeting and the roster of speakers included nearly 100 names, more than four-fifths of whom came from the 11 western states and western Canadian provinces.

Meetings of the six sections were held on June 10. In addition to Venereal Disease, the Branch has Industrial Hygiene, Laboratory, Public Health Education, Sanitation, and Epidemiology Sections. The last named has been newly organized under the chairmanship of Robert Dyar, M.D., chief of the Division of Preventive Medical Services of the California State Department of Health.

The annual banquet speaker was Russel V. Lee, M.D., director of the Palo Alto Clinic and member of the Presi-

dent's Commission on the Health Needs of the Nation. His subject was the public and professional reactions to the recommendations of this commission in the six months since it was released.

Among other speakers were Wilton L. Halverson, M.D., director, California State Department of Health and president of the APHA; Justin M. Andrews, Sc.D., associate chief, Bureau of State Services, Public Health Service, and Gaylord W. Anderson, M.D., director of the University of Minnesota School of Public Health.

At the fourth general session of the meeting the first annual John J. Sippy Award, a memorial plaque, was presented to Lester Breslow, M.D., chief, Bureau of Chronic Diseases, California State Health Department, for his leadership. The presentation was made by Walter H. Brown, M.D., formerly of the Stanford University faculty.

The annual business meeting considered the report of the APHA Reference Committee on Relationships with Affiliated Societies and Branches. Steps were authorized to define the attitude of the Branch and to negotiate a new basis of relationship with the APHA and the Affiliated Societies.

Curtiss M. Everts, Jr., director of the Division of Environmental Sanitation, Oregon State Board of Health, was elected president, succeeding Lenor S. Goerke, M.D., director of medical services, Los Angeles City Health Department. Other officers are:

President-Elect—Frank Williams, director of health education, Arizona State Health Department, Phoenix

Vice-Presidents—Richard K. C. Lee, M.D., health officer, Hawaii Territorial Department of Health, Honolulu

Ralph S. Sachs, M.D., health officer, Public Health and Welfare Division, General Electric Company, Richland, Wash.

Lloyd J. Florio, M.D., professor and head, Department of Preventive Medicine and Public Health, University of Colorado School of Medicine, Denver

Secretary-Treasurer—L. Amy Darter, supervising bacteriologist, California State Health Department (re-elected), Berkeley

Representative to the APHA Governing Council—Harold M. Erickson, M.D., Oregon State Health Officer (re-elected), Portland

CANADIAN SICKNESS SURVEY

In order to obtain "estimates of the incidence and prevalence of illness and accidents of all kinds, the amount of medical, nursing and other health care received, and the volume of family expenditures for the various types of health services," the Canadian Sickness Survey was conducted during a 12-month period beginning in the fall of 1950. The survey was initiated by the Department of National Health and Welfare and was carried out by the provincial health departments with funds made available through the National Health Program. In the planning and organization of the survey, the Dominion Bureau of Statistics cooperated. The survey method consisted of personal visits by trained lay enumerators to a sample of approximately 10,000 households distributed throughout each of the 10 provinces in metropolitan, small urban, and rural areas.

A series of publications giving the survey findings is now being released by the two agencies planning the survey. The first was *Family Expenditures for Health Services*, the second *Family Expenditures for Health Services by Income Groups*. As might be expected, the lower the income, the less in terms of actual dollars and the more in terms of percentage of total income was spent for medical services. Each of the two bulletins so far released is available from the Dominion Bureau of Statistics, Ottawa, Canada; 25¢.

DR. REED MADE HOPKINS PRESIDENT

Lowell J. Reed, Sc.D., on July 1 retired as vice-president of the Johns Hopkins University and Hospital and was made professor emeritus of biostatistics.

Before the end of July he had accepted the presidency of the university to succeed Detlev W. Bronk, Sc.D., who resigned to become president of the Rockefeller Institute for Medical Research.

Dr. Reed, who took office as president on September 1, first came to Hopkins in 1918 as associate professor of biostatistics in the School of Hygiene and Public Health where he and the late professor Raymond Pearl collaborated in developing the mathematical formula for the "logistic curve" as related to the growth of populations, by which they predicted the growth of populations with amazing accuracy.

In 1925, on Dr. Pearl's death, Dr. Reed succeeded the latter as professor of biostatistics. In 1937 he became director of the School of Hygiene and Public Health. In 1946 he was made vice-president of the university in charge of medical affairs and in 1949 vice-president also of the hospital, the first such dual appointment in Hopkins' history.

Dr. Reed is a Fellow and past president of both the American Public Health Association and the American Statistical Association. He was a member of the President's Commission on the Health Needs of the Nation. Since the outbreak of World War II, he has been consultant to a number of government agencies, among them the Public Health Service, the State Department, and the Surgeons General of the Army, Navy, and Air Force.

SIX MILLIONS FOR CARDIAC RESEARCH

The American Heart Association recently made 89 research grants-in-aid for the year 1953–1954, in the field of heart and blood vessel diseases. The sum involved is nearly half a million dollars. In addition, three career investigators will receive annual awards during their productive lives, 20 established investigators and 30 research fellows are to probe the mysteries of cardiovascular diseases during the coming year.

In the five years since the Heart Association became a voluntary health agency it and its state and local affiliated societies have spent more than six million dollars for research studies, nearly two-thirds by the affiliates. The national association allocates 50 per cent of its funds for research.

FIRST NLN CONFERENCE

At the June convention of the National League for Nursing in Cleveland, Ohio, Ruth Sleeper, director of the School of Nursing and Nursing Services at Massachusetts General Hospital, was re-elected president. More than 4,500 nurses, members of allied professions, public-spirited citizens, and students attended the convention, the first held since the reorganization of national nursing agencies in 1952.

By amendment to the by-laws, the convention voted to accept qualified practical nurses for membership in the league. A further amendment makes it possible for non-nurses and inactive nurses to participate as associate members in local leagues for nursing.

Two new interdivisional councils concerned with specific areas of nursing were created. The chairman of the new Council on Occupational Health Nursing is Mary Louise Brown, Yale University School of Medicine; of the Council on Maternal and Child Health, Aileen Hogan, Maternity Center Association, New York.

The National Student Nurse Association, made up of more than 1,000 student nurses, reportedly the first such group, was organized during the conference.

The keynote speaker of the conference was Alan Gregg, M.D., vice-president of the Rockefeller Foundation, who said that the nursing shortage was the most serious obstacle to the distribution of medical care, both military and civilian. He warned that the people

will have medical care somehow, and asked that nurses as a profession explore every way to collaborate with and meet that demand.

"CRIPPLED CHILD" CHANGES EMPHASIS

Because of the growing conviction of professional workers that the success or failure of their efforts with the individual crippled child depends on the parents' attitudes, the National Society for Crippled Children has retooled *Crippled Child*, its 30-year old magazine. The June issue (31:1) reports a period of journalistic soul-searching after which it was decided to devote each issue to problems confronting parent and child. This decision was based on the fact that the home is the basic area in which the crippled child can make a full life.

Technical material previously published in the magazine will heretofore be available in special pamphlets.

With the new emphasis, two consultant editors have joined Lawrence J. Linck, editor and executive secretary of the society, in editing the magazine. They are Earl S. Miers, author, editor, and lecturer; and Noah D. Fabricant, M.D., associate editor of the *Journal of the American Medical Association;* 11 South La Salle St., Chicago 3, Ill.; $3 per year.

NEW HEALTH CENTER FOR SAN MATEO

The San Mateo County (Calif.) Department of Health and Welfare moved into its new building in May, 1953. This building, costing more than half a million dollars, was financed without Hill-Burton funds. It is located on the same grounds as the Community Hospital. At the dedication of the auditorium on May 15, the program was sponsored by the National Foundation for Infantile Paralysis and the San Mateo County Medical Society, which will hold its monthly meetings in the new building.

Harold D. Chope, M.D., is health officer of San Mateo County, which has a population of about 250,000.

IES ELECTS OFFICERS

At the June council meeting of the Illuminating Engineering Society the election of new officers was reported as follows:

President—A. H. Manwaring, executive vice-president, Philadelphia Electrical and Manufacturing Company, Philadelphia, Pa.

General Secretary—M. N. Waterman, assistant manager of commercial engineering, Westinghouse Lamp Division, Bloomfield, N. J.

Treasurer—Kirk M. Reid, head of section, Engineering Division, General Electric Company, Cleveland, Ohio

STANDARDS FOR DISHWASHING MACHINES

National Sanitation Foundation Standard No. 3, *Spray-Type Dishwashing Machines,* is the third standard covering the construction of food vending and related machines. The first dealt with the construction of soda fountain and luncheonette equipment (*A.J.P.H.* 42: 1638 (Dec.), 1952); the second, with food service equipment (*A.J.P.H.* 43: 119 (Jan.), 1953). This latest report was prepared by a joint committee of public health officials and industrial representatives, of which Charles L. Senn was chairman. It presents recommendations for the construction and installation of spray-type dishwashing machines for use in commercial establishments. As with the earlier reports, the purpose is to present standards for safe and satisfactory operation from a public health viewpoint, as well as establish some degree of uniformity in construction methods for the manufacturer. National Sanitation Foundation, Ann Arbor, Mich.; 50¢.

FORENSIC MEDICINE AND PUBLIC HEALTH

"Expert and Technical Testimony in Medical and Health Problems" will be the topic of discussion at a conference sponsored jointly by the Institute of Industrial Health and School of Pub-

lic Health, University of Michigan, on October 21. The conference has been planned to meet the needs of attorneys, physicians, industrial hygienists, industrial nurses, and safety personnel who may have legal responsibilities relating to medical or public health problems. A Proceedings will be published after the conference covering the papers presented. Applications for enrollment should be addressed to H. E. Miller at the School of Public Health. The enrollment fee is $5, with an additional charge of $2.50 if a copy of the Proceedings is desired.

DR. KEEFER SPECIAL ASSISTANT FOR HEALTH AND MEDICAL AFFAIRS

President Eisenhower on July 30 nominated Chester S. Keefer, M.D., of Boston, as special assistant secretary of health and medical affairs to the Department of Health, Education and Welfare. Dr. Keefer is professor of medicine at Boston University School of Medicine and physician in chief of the Massachusetts Memorial Hospital. The responsibilities of this post include a review of the health and medical programs of the Department of Health, Education and Welfare and in general to advise the secretary on improvement of programs and on legislation.

Dr. Keefer has been actively identified with the National Research Council in several capacities, among which were those of allocating penicillin and other antibiotics during the developmental stages of these new preparations.

POLYOXYETHYLENE STEARATES AS FOOD ADDITIVES

A report by the Food Protection Committee of the Food and Nutrition Board, National Research Council, on the safety of polyoxyethylene stearates for use as intentional food additives was released late in July by the National Research Council.

The Food Protection Committee in 1951 formulated eleven basic principles for the evaluation of the safety of food additives. It began a review of the available evidence concerning the safety of emulsifying agents in processed foods. A detailed study of this particular group of additives was undertaken because of the controversy over some of the emulsifying agents resulting from the FDA Hearings to establish standards for bread and ice cream, and because of the need for testing the usefulness of these general principles when applied to specific problems. The committee reported in December, 1952, on the Safety of Mono- and Diglycerides for Use as Intentional Additives in Foods. This report summarizes evidence available to date, primarily from the angle of safety.

The committee concludes that no new food additive should be introduced for human consumption as long as a reasonable doubt remains concerning its safety. The potential toxicologic hazard in the incorporation of polyoxyethylene stearate into foods in technologically desirable quantities may not be great. Nevertheless, the experimental studies of the biologic behavior of these additives indicates the possibility of unfavorable reactions. "The possibility of these outweighs the arguments advanced to support its use." The committee concludes that the presently available data fail to demonstrate that polyoxyethylene stearate is safe for use in foods under all patterns of dietary consumption and for all segments of the population.

HEALTH PROBLEMS OF VAPORIZING DEVICES FOR INSECTICIDES

A study of health problems arising from vaporizers of insecticides has been published by the Committee on Pesticides of the American Medical Association and appears in the *Journal of the American Medical Association* for July 25, pages 1232–1234. The committee's report provides the laboratory and clinical evidence of the risk attendant on

improper use of these devices and the highly toxic material, usually lindane, that they dispense. Special dangers in the use of these insecticide vaporizers in homes, sleeping quarters, or where food can become contaminated are brought out. The committee concludes that evidence of injury in the majority of cases suggests that defective equipment or other types of nonconformance with recommendations for use were primarily responsible; nevertheless, it is impossible to state that harmful effects have not or will not result from properly operating devices used precisely in accordance with instructions.

STUDY OF ALASKA'S PUBLIC HEALTH

A study of health problems in Alaska has been announced under the sponsorship of the U. S. Department of the Interior and the Government of Alaska, together with other federal departments concerned with health problems. The study will be under the direction of Thomas Parran, M.D., dean of the University of Pittsburgh Graduate School of Public Health, together with a team from the university, including James A. Crabtree, M.D., Antonio Ciocco, Sc.D., and Walter J. McNerney. It is expected that the project will be completed by the end of 1954.

According to the announcement, the study will include the collection and analysis of available data on the general health and hospital problems of the native and contiguous white populations, with special reference to tuberculosis, pneumonia, maternal and child health, mental health, and crippled children's services. It will also include a study of existing programs, facilities and services and the administrative arrangements under which they operate. The recommendations will involve both immediate and long-range proposals for medical programs, hospitals and other facilities and services required to meet both the general and specific health problems, as well as the organizational, administrative, and financial arrangements for federal, territorial, and nongovernmental responsibility and participation.

HEALTH RESEARCH, INC.

On August 4 the New York State Department of Health, Albany, announced that an organization to be known as Health Research, Inc., a nonprofit corporation to promote research into the cause and treatment of diseases, had been established.

According to the announcement, the corporation has been set up under the Membership Corporation law of the state to assist in developing and increasing the research facilities of state and local health departments and institutions and agencies of the departments. This will be accomplished by means of grants given for research into any specific disease field.

Under New York State law money given to the state cannot be earmarked or held solely for research purposes but must go into the general fund. Through creation of the new organization, persons or corporations wishing to assist in financing specific research projects by the state may give money solely for this purpose. Among the directors of the new corporation are Hollis S. Ingraham, M.D., deputy state health commissioner, together with Morton L. Levin, M.D., Gilbert Dalldorf, M.D., George E. Moore, M.D., and John P. Coffey, who are identified with the department.

CORRECTION

In listing the new officers of the Southern Branch, APHA, on page 938 of the July, 1953, *Journal*, Andrew Hedmeg, M.D., the new president, was inadvertently listed as from Mississippi.

Dr. Hedmeg is director of the Division of Preventive Medicine and acting director of the Division of Local Health Services in the Louisiana State Department of Health, New Orleans.

PERSONALS

GERALD R. CLARK, M.D., M.P.H.,† for the past year health officer, Clackamas County, Ore., and formerly with the Public Health Service assigned to various states, has been made health officer of New Mexico. He succeeds JAMES R. SCOTT, M.D.,* who resigned to become director of the four-county health district, with offices in Las Cruces, for 18 months to fill out 30 years' service with the department.

SIR ALLEN DALEY,* Honorary Fellow, former medical officer of health and school medical officer of the County of London, through a grant from the Nuffield Foundation, visited Australia on a postgraduate lecture tour early in 1953, during which time he called on the health departments and took part in the Conference of Medical Officers of Health in February.

DR. LOUIS FINDLAY of Edinburgh, Scotland, formerly medical consultant for the United Nations Korean Reconstruction Agency, has been appointed by the World Health Organization as chief, Health Division, United Nations Relief and Works Agency for Palestine Refugees in the Middle East, succeeding JEROME S. PETERSON, M.D.,* now director of the Division of Organization of Public Health Services at WHO Headquarters in Geneva.

WILTON MONROE FISHER, M.D.,* assistant chief, Laboratory Branch, Communicable Disease Center, Atlanta, Ga., has been appointed chief, Residency and Internship Section, Research and Education Service, Veterans Administration, Washington, D. C.

COL. KERMIT H. GATES,† MC, USA, for the past three years chief medical officer at Fort Jackson, S. C., has been appointed deputy post commander of Walter Reed Army Medical Center, Washington, D. C., succeeding COL. JOSEPH U. WEAVER, MC, USA, who has been transferred to duty in Europe.

MYRTLE GREENFIELD,* director of the New Mexico Public Health Laboratory, Albuquerque, received an honorary LL.D. degree from the University of New Mexico at the June commencement.

HELENA M. HALEY, R.N.,† former supervising nurse, Rensselaer County (N.Y.) Health Department, and HELEN M. WOLFE, M.P.H.,† former director of nursing, Richmond, (Calif.) Health Department, have been appointed public health nursing consultants, California State Health Department, to serve northern California counties.

G. R. JONES, M.D.,† director, Division of Communicable Diseases, Kentucky State Department of Health, is on a two-year leave of absence with the United States Army at Brooke Army Medical Center, San Antonio, Tex.

BARBARA L. KAHN,† is the first industrial health education consultant, Industrial Hygiene Section, Oregon State Board of Health, Portland.

EMIL KOTCHER, Sc.D.,† epidemiologist, Kentucky State Department of Health is in Saigon for two years as a consultant in parasitology, Public Health Service.

ALEXANDER W. KRUGER, M.D.,† formerly in the office of the assistant chief medical director for hospital operations, Veterans Administration, has been named manager of the VA Hospital at Manchester, N. H.

CARL W. LARSON, Ph.D.,† adviser to the Board of Directors and managing director, the Dairy Products Improvement Institute, has on retirement been elected to the Board of Directors. As adviser, he has been succeeded by ARTHUR C. DAHLBERG, professor of dairy industry, Cornell University, Ithaca, N. Y. The institute's offices have been moved to Ithaca.

MYRON D. MILLER, M.D.,† formerly assistant chief, Division of Hospitals, Public Health Service, has been appointed medical officer in charge of the Public Health Service Hospital, Seattle, Wash., succeeding the late WILLIAM W. NESBIT, M.D.

SOPHIE C. NELSON, R.N.,* who retired from the John Hancock Mutual Life Insurance Company, Boston, on September 1, after many years as director of the Visiting Nurse Service, was elected president of the Massachusetts Public Health Association and its representative to the Governing Council, APHA, at the recent meeting of MPHA.

EDITH OAKES,† for the past two years assistant professor of Public Health Nursing at Western Reserve University, has been appointed nursing director, Tompkins County (N. Y.) Health Department.

CHARLES L. PAQUIN, formerly field representative, the Division of Tuberculosis and Venereal Disease Control, Michigan State Department of Health, is now area field representative, Kentucky Tuberculosis Association, working in the 18 counties serviced by District 4 State Tuberculosis Hospital in Ashland.

EUGENE H. PAYNE, M.D.,† of Parke, Davis and Company, has recently returned from a 38,000-mile, six-month survey of progress in tropical medicine during which time he visited 30 different research centers.

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* Fellow.
† Member.

DONALD E. PORTER, M.A.,† formerly director, Tuberculosis Division, New York Tuberculosis and Health Association, has been appointed executive secretary, Passaic County (N. J.) Tuberculosis and Health Association, succeeding GEORGE A. KAVNER,* who has gone into business.

JAMES J. QUINLIVAN, M.D.,* assistant director, Division of Local Health Services, New York State Health Department has been appointed director of the department's Office of Public Health Education, Albany, N. Y.

GEOFFREY WILLIAM RAKE, M.B.,† coordinator of the Office of Scientific Affairs of E. R. Squibb and Sons Division, Mathieson Chemical Corporation, has been named a member of the Board of Directors of the American Institute for the Tropics and chairman of its Committee on Medicine and Public Health. Dr. Rake is attending the International Congress for Tropical Diseases in Istanbul, August 28–September 4, and the International Congress for Microbiology, September 6–12, in Rome as United States delegate.

W. A. SODEMAN, M.D.,* chairman of the department and Henderson professor of prevention of tropical and semitropical disease at Tulane University School of Medicine, New Orleans, has resigned to become professor of internal medicine, University of Missouri School of Medicine, Columbia. Dr. Sodeman will also be responsible for the teaching of preventive medicine.

ANN SWITZER, M.D.,† health education consultant, Public Health Service, has been appointed assistant executive secretary, Connecticut Tuberculosis Association, Hartford.

CAPT. CHARLES C. TERRY, M.D., MC, U.S.N. (rtd.), has been appointed regional medical consultant, National Foundation for Infantile Paralysis, for Illinois, Indiana, Kentucky, Michigan, Ohio, and Wisconsin.

AVIS H. THYGE,† formerly nutritionist, New York City Department of Health, has been appointed assistant director and nutritionist, the Dairy Council of Westchester County, White Plains, N. Y.

THOMAS E. TONKIN,† formerly office manager, the Commission on Financing of Hospital Care in Chicago, has been appointed administrator of the University of California's Ernest V. Cowell Memorial Hospital in Berkeley, succeeding JACK M. SCOLLARD, now assistant director, Sacramento County Hospital.

MILTON V. VELDEE, M.D.,* vice-president and medical director, Hyland Biological Laboratories of Los Angeles, has resigned and is serving as a consultant to the Stanford Research Institute of Palo Alto, Calif., and to the Michael Reese Research Foundation, Chicago.

JACK W. WASHKUHN, M.P.H.,† with experience as a toxicologist in the Army Chemical Corps, has been appointed an industrial hygienist, San Mateo County (Calif.) Health and Welfare Department.

JAMES M. A. WEISS, M.D., M.P.H.,† former Fellow of the National Institute of Mental Health and psychiatric resident at Yale University School of Medicine, has been appointed chief, Mental Hygiene Consultation Service, U. S. Army, Fort Bliss, Tex.

ESTHER WERMINGHAUS, R.N., for the last three years free-lance feature writer for the *Milwaukee Journal* and the Overseas News Agency in Germany, has been named to the newly created post of associate executive secretary in charge of public relations, American Nurses' Association, New York City.

FREDERICK A. WHITEHOUSE, Ed.D.,† formerly director of vocational rehabilitation and education, Institute for Crippled and Disabled, New York City, is now rehabilitation consultant, American Heart Association.

RUSSELL M. WILDER, M.D.,* director, National Institute of Arthritis and Metabolic Diseases, has retired for reasons of health. He and Mrs. Wilder have returned to their home in Rochester, Minn.

MILTON C. WINTERNITZ, M.D., chairman Medical Sciences Division, National Research Council, Washington, D. C., has retired and has been succeeded by Vice-Chairman R. KEITH CANNAN, D.Sc.

DAVID J. ZAUGG, M.D.,† former medical officer in charge, Public Health Service Outpatient Clinic in New York City, has been appointed medical officer in charge, PHS Hospital, Chicago, Ill., succeeding EDDIE M. GORDON, M.D., now head of the PHS Hospital (National Leprosarium), Carville, La., in which position he succeeds FREDERICK A. JOHANSEN, M.D., retired after 29 years of service.

DEATHS

VERGIL F. BRADFIELD,† administrator, Memorial Hospital, Modesta, Calif., on June 30 (Medical Care Section).

ARTURO CASTIGLIONI, professor in the history of medicine, Yale University, from 1943 to 1947, and author of the book, *History of Medicine* (which was translated into six

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* Fellow.
† Member.

languages), in Milan, Italy, at the age of 78.

N. THOMAS ENNETT, M.D.,† director of health, Carteret County (N. C.) Health Department, on June 23 (Maternal and Child Health Section).

JAMES ADAMS HAYNE, M.D.,* secretary of the South Carolina State Board of Health, from 1911 to 1944, when he retired to become public health education director for the department, on May 11 at the age of 81 (Health Officers Section).

CHARLES H. HURD.* formerly consulting engineer, Ft. Lauderdale, Fla., but retired as of June, 1952 (Engineering Section).

MARIE L. JOHNSON, R.N.,* associate director, Nursing Bureau, Health and Welfare Division, Metropolitan Life Insurance Company, New York, N. Y. on July 22 (Public Health Nursing Section).

WILLIAM H. MCCASTLINE, M.D.,† formerly for many years medical officer of Columbia University, on July 11 at the age of 77 (Maternal and Child Health Section).

MYRON P. RUDOLPH, M.D., Dr.P.H.,* chief, Maternal and Child Health Clinic and the Crippled Children's Section, North Carolina Board of Health, Raleigh, on June 30 at the age of 64 (Unaffiliated).

STEWART GORDON THOMPSON, D.P.H., managing director of the Florida Medical Association and managing editor of its journal, on April 23 in Jacksonville.

J.A.K. ESTAPA VAN HASSELT, C.E., M.P.H.,† public health engineer, Training Center, Louisiana State Health Department on June 19 (Engineering Section).

CONFERENCES AND DATES

American Public Health Association. 81st Annual Meeting, New York, N. Y. November 9–13 and Related Organizations including:

American Association of Hospital Consultants
American Association of Public Health Physicians
American Association of Registration Executives
American Board of Preventive Medicine, Inc.
American School Health Association
Association of Business Management in Public Health
Association of Maternal and Child Health and Crippled Children's Directors
Association of Reserve Officers of the U. S. Public Health Service
Association of Schools of Public Health
Association of State and Territorial Public Health Nutritionists
Biometrics Society
Commissioned Officers Association of the U. S. Public Health Service
Conference for Health Council Work
Conference of Municipal Public Health Engineers
Conference of Professors of Preventive Medicine
Conference of Public Health Veterinarians
Conference of State and Provincial Public Health Authorities of North America
Conference of State and Provincial Public Health Laboratory Directors
Conference of State Directors of Health Education
Inter-American Association of Sanitary Engineers, U. S. Section
Military Government-Civil Affairs Public Health Society
National Advisory Council, Cleveland Health Museum
National Sanitation Foundation
Public Health Cancer Association

State and Regional Public Health Meetings:

Florida Public Health Association. Tampa. October 22–24.
Minnesota Public Health Conference. Nicollet Hotel, Minneapolis. September 24–25.
North Carolina Public Health Association. Carolinian Hotel, Nag's Head, N. C. September 10–12.
North Dakota Public Health Association. Ray Hotel, Dickinson. October 26–27.
Oklahoma Public Health Association. Mayo Hotel, Tulsa. December 3–5.
Pennsylvania Public Health Association. Hotel Sterling, Wilkes-Barre. October 9.

Meetings of Other Organizations Coming in September, October, and November:

American Academy of Pediatrics. Miami, Fla. October 6–9.
American Association of Medical Record Librarians. Palace Hotel, San Francisco, Calif. October 5–9.
American Cancer Society. Annual Meeting. New York, N. Y. November 2–6.
American Dental Association. 94th Annual

Session. Cleveland, Ohio. September 28–October 1.

American Psychiatric Association. Mental Hospital Institute. Little Rock, Ark. October 19–22.

American Society of Planning Officials. Hotel Statler, Detroit, Mich. October 11–15.

American Standards Association. Waldorf Astoria Hotel, NewYork, N. Y. October 19–21.

Arthritis and Rheumatism Foundation. New York, N. Y. October 5.

Association of American Medical Colleges. Hotel Claridge, Atlantic City, N. J. October 26–28.

Federation of Sewage and Industrial Wastes Associations. Miami, Fla. October 13–16.

International City Managers' Association. Hotel Statler, Los Angeles, Calif. September 20–24.

International Congress of Pediatrics. Havana, Cuba. October 12–17.

International Congress of Microbiology. Rome, Italy. September 6–12.

International Congress of the United States Conference of Mayors and the Canadian Federation of Mayors and Municipalities. Montreal, Canada. September 21–24.

National Association for Mental Health. Annual Meeting. Hotel Carter, Cleveland, Ohio. October 31–November 2.

National Association of Housing Officials. Milwaukee, Wis. October 13–16.

National Association of Sanitarians. Milwaukee, Wis. September 8–11.

National Conference on Physicians and Schools. Moraine-on-the-Lake Hotel, Highland Park, Ill. September 30-October 2.

National Council on Family Relations. East Lansing, Mich. September 1–3.

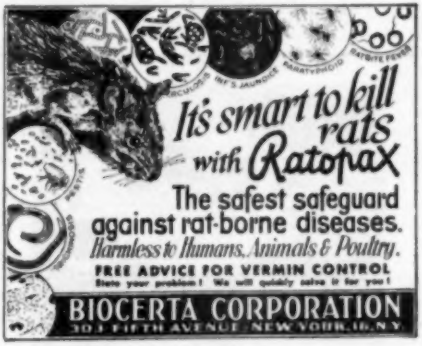
National Recreation Association. Philadelphia, Pa. September 28–October 2.

National Safety Congress and Exposition. Conrad Hilton Hotel, Chicago, Ill. October 19–23.

National Social Welfare Assembly. Annual Meeting. New York, N. Y. November 12–13.

National Society for Crippled Children and Adults. Chicago, Ill. November 9–11.

World Congress of the World Confederation for Physical Therapy. London, England. September 7–12.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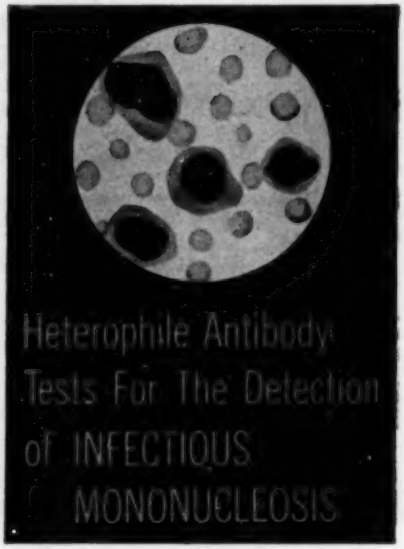

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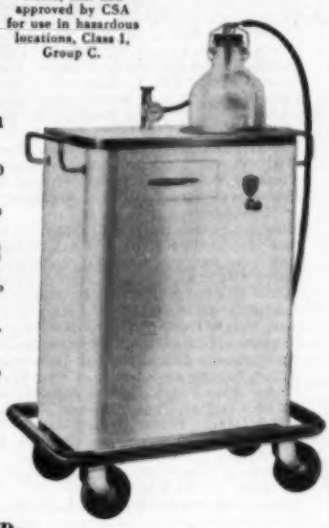

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(Continued from previous page)

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by

WILLIAM A. HADFIELD
Technical Service Department
Pennsylvania Salt
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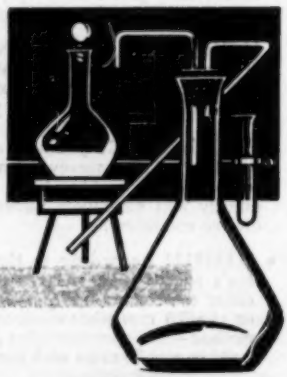

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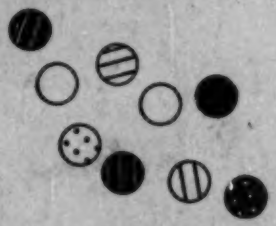

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